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Results of Limnological Investigations Carried Out in 1986 on 5 Coastal and Interior Lakes in British Columbia.

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RESULTS OF LIMNOLOGICAL INVESTIGATIONS CARRIED OUT IN 1986 ON 5 COASTAL AND INTERIOR LAKES IN BRITISH COLUMBIA

by

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ABSTRACT

Nidle, B.H., K.S. Shortreed, K.V. Masuda, T.R. Whitehouse, and R.C. Carrier. 1990. Results of limnological investigations carried out in 1986 on 5 coastal and interior lakes in British Columbia. Can. Data Rep. Fish. Aquat. Sci. 806: 213 p.

Results from limnological studies of 5 British Columbia lakes are presented. A total of 20 locations in the 5 lakes were sampled (from 6 to 11 times per lake) for a variety of physical, chemical, and biological variables. The lakes are oligotrophic, with total phosphorus concentrations ranging from <1 $\mu g \cdot L^{-1}$ to 5.5 $\mu g \cdot L^{-1}$ and epilimnetic chlorophyll concentrations from 0.19 $\mu g \cdot L^{-1}$ to 2.83 $\mu g \cdot L^{-1}$. The lakes are generally clear, with compensation depths ranging from 7.7 to 27.7 m. Phytoplankton production rates ranged from 64 to 293 mg $C \cdot m^{-2} \cdot d^{-1}$. Raw and summarized data for each station and date are presented in tabular form; temperature and *in vivo* fluorescence data are presented as figures.

Key words: oligotrophic, nutrients, bacteria, picoplankton, phytoplankton, primary production, chlorophyll, *in vivo* fluorescence, zooplankton, lake fertilization.

RÉSUMÉ

Nidle, B.H., K.S. Shortreed, K.V. Masuda, T.R. Whitehouse, and R.C. Carrier. 1990. Results of limnological investigations carried out in 1986 on 5 coastal and interior lakes in British Columbia. Can. Data Rep. Fish. Aquat. Sci. 806: 213 p.

Les résultats d'études limnologiques de 5 lacs de la Colombie-Britannique sont présentés ici. Au total, on a échantillonné 20 sites dans les 5 lacs (de 6 à 11 fois par lac) afin de déterminer divers paramètres physiques, chimiques et biologiques. Les lacs sont oligotrophes; les teneurs en phosphore total varient de <1 $\mu g \cdot L^{-1}$ à 5,5 $\mu g \cdot L^{-1}$ et les concentrations de chlorophylle dans l'épilimnion vont de 0,19 $\mu g \cdot L^{-1}$ à 2,83 $\mu g \cdot L^{-1}$. L'eau des lacs est généralement claire et les valeurs de compensation varient de 7,7 à 27,7 m. Les taux de production du phytoplancton vont de 64 à 293 mg de $C \cdot m^{-2} \cdot j^{-1}$. Les données brutes et résumées sont montrées pour chaque site et date d'échantillonage sous forme de tableaux; les données de température et de fluorescence *in vivo* sont présentées sous forme de figures.

Mots-clés: oligotrophe, éléments nutritifs, bactéries, picoplanction, phytoplancton, production primaire, chlorophylle, fluorescence *in vivo*, zooplancton, fertilisation d'un lac.

INTRODUCTION

Numerous British Columbia lakes are nursery areas for sockeye salmon (*Oncorhynchus nerka*), the most commercially valuable species of Pacific salmon in North America. Current priorities in fisheries research in British Columbia include ascertaining means of increasing adult sockeye returns and improving management (optimizing catch and escapement) of those returns. One aspect of this general objective is the determination of factors in the lacustrine portion of the sockeye life cycle which affect recruitment, growth, and survival. To do this it is necessary to understand which factors (physical, chemical, and biological) control primary and secondary production in these lakes. Further, it is necessary to identify members of the various plankton (bacterio-, pico-, phyto-, zoo-) communities in each lake which are important components of food-chains leading to juvenile sockeye. Once some understanding of the trophic structure of a particular lake has been reached, both its carrying capacity for juvenile sockeye and its potential for sockeye enhancement can be better estimated. Appropriate enhancement techniques (lake fertilization, spawning channels, hatcheries, increased escapements) can then be identified.

In selected British Columbia sockeye nursery lakes which are nutrient-limited and which exhibit density-dependent growth of juvenile sockeye, lake fertilization has been a particularly successful sockeye enhancement technique (Hyatt and Stockner 1985; Stockner 1987). The technique has also been used successfully in Alaska (Koenings and Burkett 1987) and in the Soviet Union (Kurenkov 1988). In British Columbia, lake fertilization was first used as a sockeye enhancement technique 20 years ago on an oligotrophic Vancouver Island lake (LeBrasseur *et al.* 1978). Since an expanded lake fertilization program commenced in 1977, 19 British Columbia lakes have been treated for a varying number of years; 10 lakes were fertilized in 1986. Fertilization in British Columbia has generally consisted of the application of inorganic nitrogen and phosphorus fertilizers to selected lakes at selected times, locations, loading rates, and nutrient ratios (Stephens and Stockner 1983; Stockner and Shortreed 1985).

In this report, limnological data collected from 5 lakes (Adams, Chilko, Nimpkish, Quesnel, and Sproat) are presented. Two of the lakes (Nimpkish and Sproat) were fertilized in 1986 and the remaining three lakes are candidates for sockeye enhancement (in 1988 sockeye spawning channels were constructed on the Chilko and Quesnel systems, with additional enhancement initiatives such as fertilization and/or further channel construction a possibility). Data reported in these ongoing investigations are used primarily to better understand the trophic status and structure of selected British Columbia lakes and to assess impacts of any enhancement initiatives. Further collation and synthesis of data collected in this study and in those of previous years have to date resulted in a number of publications (Appendix Table 1) which have improved our understanding of B.C. lakes, and these data reports are an integral part of that continuing process.

DESCRIPTION OF STUDY LAKES

All lakes in this study are oligotrophic and have relatively small littoral zones, low inorganic nutrient levels and low phytoplankton biomass (Shortreed and Stockner 1981; Stockner and Shortreed 1983; 1985).

Adams Lake drains into Shuswap Lake and is a clear, cool monomictic lake which lies in the interior western hemlock and interior douglas fir biogeoclimatic zones (Farley 1979). Winters are cold, summers are warm and dry, and annual precipitation ranges from 40-75 $cm \cdot yr^{-1}$. Nimpkish Lake is a clear, warm monomictic lake located in northern Vancouver Island's coastal western hemlock biogeoclimatic zone. The climate is cool mediterranean, with warm summers and cool, wet winters. Precipitation at Nimpkish Lake averages 250-350 $cm \cdot yr^{-1}$. Sproat Lake, located in the coastal western hemlock zone of south-central Vancouver Island, is also a clear, warm monomictic lake with a mediterranean climate. Precipitation averages 150-250 $cm \cdot yr^{-1}$ at Sproat Lake. Chilko Lake is located in the west-central portion of the Fraser River drainage basin. It has several glacially turbid inflows in the southern half of the lake, but remains clear for most of the year throughout the lake. The northern portion of Chilko Lake is situated in the Cariboo aspen-lodgepole pine biogeoclimatic zone and receives 50-75 $cm \cdot yr^{-1}$ rainfall, while the southern half of the lake lies in the subalpine Engelmann spruce-subalpine fir biogeoclimatic zone and receives 250-350 $cm \cdot yr^{-1}$ of rainfall. Summers at Chilko Lake are warm and dry; winters are severe. Despite cold winter temperatures, Chilko Lake does not freeze completely in most winters; it is best categorized as dimictic. Dimictic Quesnel Lake is located in the east-central portion of the Fraser River drainage basin in the interior western hemlock biogeoclimatic zone. Severe winters and warm, dry summers occur with annual precipitation ranging from 50-250 cm.

METHODS

Nimpkish and Sproat lakes were fertilized once a week during the growing season for 18 weeks (May 18 to September 30) and 8 weeks (May 20 to July 7), respectively. Fertilizer (consisting of an aqueous solution of ammonium nitrate and ammonium phosphate) was applied to Nimpkish Lake in an N:P atomic ratio of 9:1 and to Sproat Lake in an N:P atomic ratio of 50:1. Loading rates were 6.0 mg $P \cdot m^{-2} \cdot wk^{-1}$ to Nimpkish Lake and 5.6 mg $P \cdot m^{-2} \cdot wk^{-1}$ to Sproat Lake (Table 1).

In 1986, we collected data from 20 locations on 5 lakes (Fig. 1-6). Number of sampling dates, depths sampled and types of analyses carried out at each sampling location (station) varied considerably (Table 3). At Chilko Lake, 2 stations were sampled 1 or 2 times per month from May to October for nutrients, phytoplankton, zooplankton and primary productivity. In addition, temperature profiles were collected once weekly at 10 stations located along the longitudinal axis of the lake (Fig. 3). On some occasions four additional stations along an east-west transect at Station 10 were also sampled, and on two occasions (June 6 and July 4), nutrient, phytoplankton and zooplankton samples were taken along this transect. In addition, lake bathymetry was determined by carrying out a number of transects while using a Furuno (Model FM22) depth sounder (Fig. 2.1). From these data, lake volume, mean depth, and water renewal times were calculated. Adams, Nimpkish and Quesnel lakes were sampled once per month from May to October, while Sproat Lake was sampled 1 to 3 times per month from April to November. The number of locations sampled on each lake varied from 2 on Nimpkish and Sproat lakes to 14 on Chilko Lake.

Temperature profiles from the surface to the lake bottom (or a maximum depth of 200 m) were obtained at most stations using Applied Microsystems Limited conductivity, temperature and depth measuring systems (Models CTD-12 and STD-12). Surface temperatures were collected using a

hand-held thermometer. Buoyancy frequencies (s^{-1}) were calculated (Turner 1973) and depth of maximum buoyancy frequency was used to determine epilimnion depth.

A Li-Cor light meter (Model 185A) equipped with a Li-Cor underwater quantum sensor (Model LI-192S) was used to measure photosynthetic photon flux density (PPFD: 400-700 nm) from the surface to the compensation depth (1% of surface intensity) and vertical light extinction coefficients were calculated. A standard 22-cm white Secchi disk was used to measure water transparency.

A Turner Designs Model 10 fluorometer or an Electro-Optik Juan F. Suarez (EOS) *in situ* fluorometer were used to collect *in vivo* fluorescence (IVF) profiles from 0-50 m at most lakes and stations. Chlorophyll samples taken from 4 to 10 depths in the water column were used to convert relative IVF units to chlorophyll concentration.

An opaque 6-L Van Dorn bottle was sterilized with 95% ethanol and used to collect all water samples, usually between 0800 and 1200 h. An acid washed, deionized distilled water (DDW) rinsed, screw-capped test tube was rinsed and then filled with sample water from each sampling depth, covered with clean aluminum foil, capped, stored at 4°C, and later analyzed for total phosphorus. All chemical analyses were carried out according to methods given in Stephens and Brandstaetter (1983). Water samples for the remaining nutrient analyses and for chlorophyll determinations were collected in 1-L or 2-L polyethylene bottles, kept cool and dark, and filtered within 2-4 h. Water for dissolved nutrient analyses was filtered through 47-mm Whatman GF/F filters, which had been previously ashed (460°C for 4 h) and washed (500 mL DDW). Each filter was placed in a 47-mm Swinnex (Millipore Corp.) filtering unit, rinsed with an additional 500 mL of DDW, and then rinsed with approximately 50 mL of sample. An acid washed, DDW rinsed glass bottle was rinsed and filled with 100 mL of filtered water, covered with clean aluminum foil, capped, and stored at 4°C in the dark, and later analyzed for nitrate, ammonia and total dissolved nitrogen. An additional 100 mL of sample was filtered into a precleaned and rinsed polyethylene bottle, stored at 4°C in the dark, and later analyzed for soluble reactive silicon and total dissolved solids.

One liter of water from each sampling depth was filtered through an ashed and washed 47-mm diameter Whatman GF/F filter, which was then folded in half, placed in an ashed aluminum dish, stored in a dessicator overnight, and then frozen prior to being analyzed for particulate carbon and nitrogen. A 2-L sample was filtered through an ashed and washed 47-mm diameter Whatman GF/F filter which was then placed into a clean scintillation vial, and later analyzed for particulate phosphorus. A 500-mL sample was filtered under subdued light through a 47-mm diameter, 0.8-µm Millipore AA filter and a few drops of $MgCO_3$ suspension were added. The filter was folded in half, placed in an aluminum dish, stored overnight in a dessicator, and then frozen until it was analyzed for total chlorophyll using a Turner fluorometer (Model 112).

At stations where primary productivity was measured, glass jars were filled completely with water (generally from 1, 3 and 7.5 m), and sealed. A Cole-Parmer Digi-Sense pH meter (Model 5986-10) was used to determine the pH and total alkalinity of these samples acccrding to the standard potentiometric method of APHA (1980). Dissolved inorganic carbon (DIC) was established indirectly from pH, temperature, total dissolved solids and bicarbonate alkalinity.

Test tubes containing 2-3 mL of 95% ethanol were rinsed thoroughly with water, and then filled. From each test tube 5 mL were filtered through a 25-mm diameter, 0.2-µm Nuclepore membrane filter counter-stained with Irgalan black. Filters were removed when just dry, placed in petri dishes lined with absorbent filter paper, and air-dried at room temperature. Bacterioplankton numbers were later determined from these samples using the acridine orange direct count method as described by MacIsaac et al. (1981). Random fields were counted on each filter until 300 bacteria or 10 fields were enumerated, and the counts converted to numbers·mL^{-1}. Occasional blanks were used to check for significant bacteria background counts in the Irgalan black solution and rinse water.

Opaque 125-mL polyethylene bottles were rinsed and filled with sample water in the field for phytoplankton enumeration and identification. Phototrophic picoplankton (cyanobacteria and eukaryotic algae <3 µm in diameter) were enumerated using the method described by MacIsaac and Stockner (1985). Fifteen mL of sample water was filtered through stained Nuclepore filters as described for the bacteria samples. Care was taken to minimize exposure of the sample to light during sampling and laboratory processing. Filters were placed in opaque petri dishes, air-dried, and stored in the dark at room temperature for 1 to 4 weeks. During analysis, each filter was placed on a wetted 40-µm mesh nylon screen in a filter holder, 1-2 mL of filtered DDW were added to the filter column, and the cells on the filter were rehydrated for 3 to 5 min. The water was drawn through at a vacuum pressure of 20 cm Hg, and the moist filter was placed on a glass slide with a drop of immersion oil and a coverslip. The Zeiss epifluorescence microscope was equipped with a 397 nm longwave-pass exciter filter and a 560 nm shortwave-pass exciter filter, a 580 nm beam-splitter mirror and a 590 nm longwave-pass barrier filter. Filters were examined at 1250x magnification under oil immersion, and random fields were counted to a minimum of 200 cells or 30 fields per sample. Phototrophic picoplankton were identified as cyanobacteria or eukaryotic algae, assigned to general categories based on morphological characteristics and fluorescence colour, and scored into size categories.

The remaining sample water in the opaque polyethylene bottles was fixed with 1 mL of Lugol's solution and phytoplankton >3 µm in diameter were later enumerated and identified from this sample. For analysis, each sample was gently mixed and a subsample settled overnight in a settling chamber of 7-, 12- or 27-mL volume. One transect at 187.5x and one at 750x magnification were counted using a Wild M40 inverted microscope equipped with phase contrast optics. Cells were identified to genus or species and volumes were estimated by equating cells to geometric shapes. Carbon biomass was calculated using formulas from Strathmann (1967) and Weisse (1988).

Primary production was measured at selected stations at Chilko, Quesnel and Sproat lakes at 7 to 10 depths in the water column (usually between 0 and 30 m). Two 125-mL light bottles were filled with water from each depth and dark bottles were filled with water from 1, 3, 5 and 30 m. Each bottle was inoculated with approximately 93 kBq of a ^{14}C-bicarbonate stock solution. At each station activity of the stock solution was determined by inoculating three scintillation vials containing 0.5 mL of Scintigest (Fisher Scientific). Bottles were incubated at their respective depths for 1-2 h, generally between 0900 and 1200 h. After incubation, bottles were placed in dark boxes and transported to the field laboratory where filtration started within 2 h after incubation stopped. Two 50-mL aliquots were removed from each bottle and filtered through 47-mm diameter Nuclepore filters (0.2 and 2.0 or 3.0-µm pore size) at a vacuum pressure not exceeding 20 cm Hg. Filters were placed into

scintillation vials containing 0.5 mL of Scintigest. At the laboratory, 10 mL of Scintiverse II (Fisher Scientific) were added to each scintillation vial. Samples were counted in a Packard Tri-Carb 4530 Liquid Scintillation counter. Quench series composed of the same scintillation cocktail and filters as used for samples were used to determine counting efficiency and Strickland's (1960) equation was used to calculate primary production rates. Production was converted from hourly to daily rates using light data collected with Li-Cor printing integrators (Model 550) equipped with Model 190S quantum sensors.

Zooplankton were collected with a 100-µm mesh size SCOR (Scientific Committee on Ocean Research) net (0.25 m^2 mouth area) towed vertically at approximately 0.5 $m \cdot s^{-1}$ from 50 m to the surface. Zooplankton were preserved in a 4% formalin-sucrose solution buffered with borax (Haney and Hall 1973). Filtration efficiency of the net was assumed to be 100%. At the laboratory, each sample was halved using a Folsom plankton splitter. One half was filtered onto an ashed and weighed Whatman GF/C filter, dried to a constant weight at 90°C for 24 h and weighed. This portion of the sample was then ashed (460°C for 4 h) and weighed again. Zooplankton biomass is expressed as mg dry weight $\cdot m^{-3}$ and mg ash-free dry weight $\cdot m^{-3}$. The other portion of the sample was used for zooplankton identification and enumeration, which will be reported elsewhere.

RESULTS

Summary tables consisting of monthly means and time weighted growing season averages, along with raw data tables for each lake, station and date are presented. In addition, *in vivo* fluorescence profiles have been combined with discrete chlorophyll measurements to give monthly plots of measured and calculated chlorophyll for Adams, Nimpkish and Quesnel lakes. Sproat Lake chlorophyll profiles have been previously reported by Shortreed and Stockner (1990).

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Table 1. Geographic and hydrologic data from, and fertilizer additions to, the 1986 study lakes.

Lake	Adams	Chilko	Nimpkish	Quesnel	Sproat
Latitude (N)	51°15'	51°20'	50°25'	52°30'	49°14'
Longitude (W)	119°30'	124°05'	126°07'	121°00'	125°06'
Elevation (m)	407	1172	20	725	29
Lake area (km^2)	138	200	37	270	41
Mean depth (m)	169	123	162	158	59
Water residence time (y)	10.5	20.8	1.4	10.8	8.0
Fertilizer load (mg $P/m^2/wk$)	0	0	6.0	0	5.6

Table 2. Legend for Table 3.

Symbol
A.....light profiles (Secchi depth, extinction coefficients)
B.....temperature profiles
C.....ammonia, nitrate, total dissolved nitrogen, total phosphorus, silica, total dissolved solids
D.....C (above) plus particulate carbon, nitrogen and phosphorus
E.....total chlorophyll.
F.....picoplankton and phytoplankton identification and enumeration.
G.....bacteria biomass
H.....zooplankton dry weight and ash-free dry weight
I.....pH, total alkalinity and dissolved inorganic carbon
J.....photosynthetic rates
K.....IVF profiles

Table 3. Physical, chemical and biological variables measured at each lake and station during 1986.

Lake and station	Variables measured	Depths sampled (m)	Number of sampling dates
Adams-1	A,B,C,D,E,F,G,H,I,K	variable	6
Adams-2	A,B,C,D,E,F,G,H,I,K	variable	6
Adams-3	A,B,C,D,E,F,G,H,I,K	variable	6
Chilko-7	A,B,C,D,E,F,H,I,J,K	variable	7
Chilko-10	A,B,C,D,E,F,H,K	1,5,10	2
Chilko-10A	A,B,C,D,E,F,H,K	1,5,10	2
Chilko-10B	A,B,C,D,E,F,H,K	1,5,10	2
Chilko-10C	A,B,C,D,E,F,H,K	1,5,10	2
Chilko-10D	A,B,C,D,E,F,H,K	1,5,10	2
Chilko-11	A,B,C,D,E,F,H,I,J,K	variable	9
Nimpkish-1	A,B,C,D,E,F,G,H,K	1,3,5,40	6
Nimpkish-2	A,B,C,D,E,F,G,H,K	1,3,5,40	6
Quesnel-1	A,B,C,D,E,F,G,H,K	1,5,10,40	6
Quesnel-2	A,B,C,D,E,F,G,H,K	1,5,10,40	6
Quesnel-3	A,B,C,D,E,F,G,H,K	1,5,10,40	6
Quesnel-4	A,B,C,D,E,F,G,H,K	1,5,10,40	6
Quesnel-5	A,B,C,D,E,F,G,H,I,J,K	variable	6
Quesnel-7	A,B,C,D,E,F,G,H,I,J,K	variable	6
Quesnel-8	A,B,C,D,E,F,G,H,K	1,5,10,40	6
Sproat-1	A,B,C,D,E,F,G,H,I,J,K	variable	11
Sproat-2	A,B,C,D,E,F,G,H,I,J,K	variable	10

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Fig. 1. Location of lakes studied in the 1986 program.

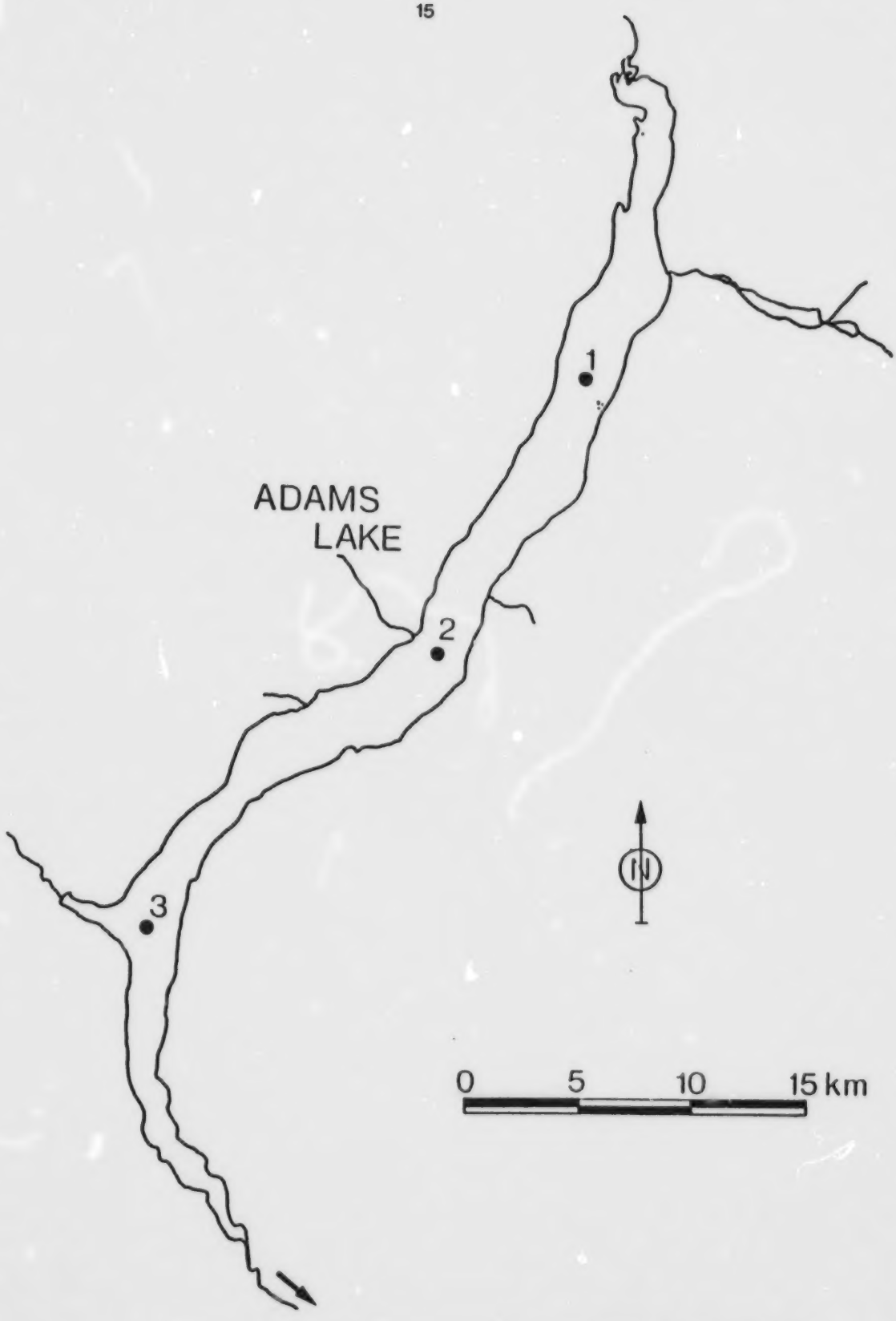

Fig. 2. Location of sampling stations at Adams Lake.

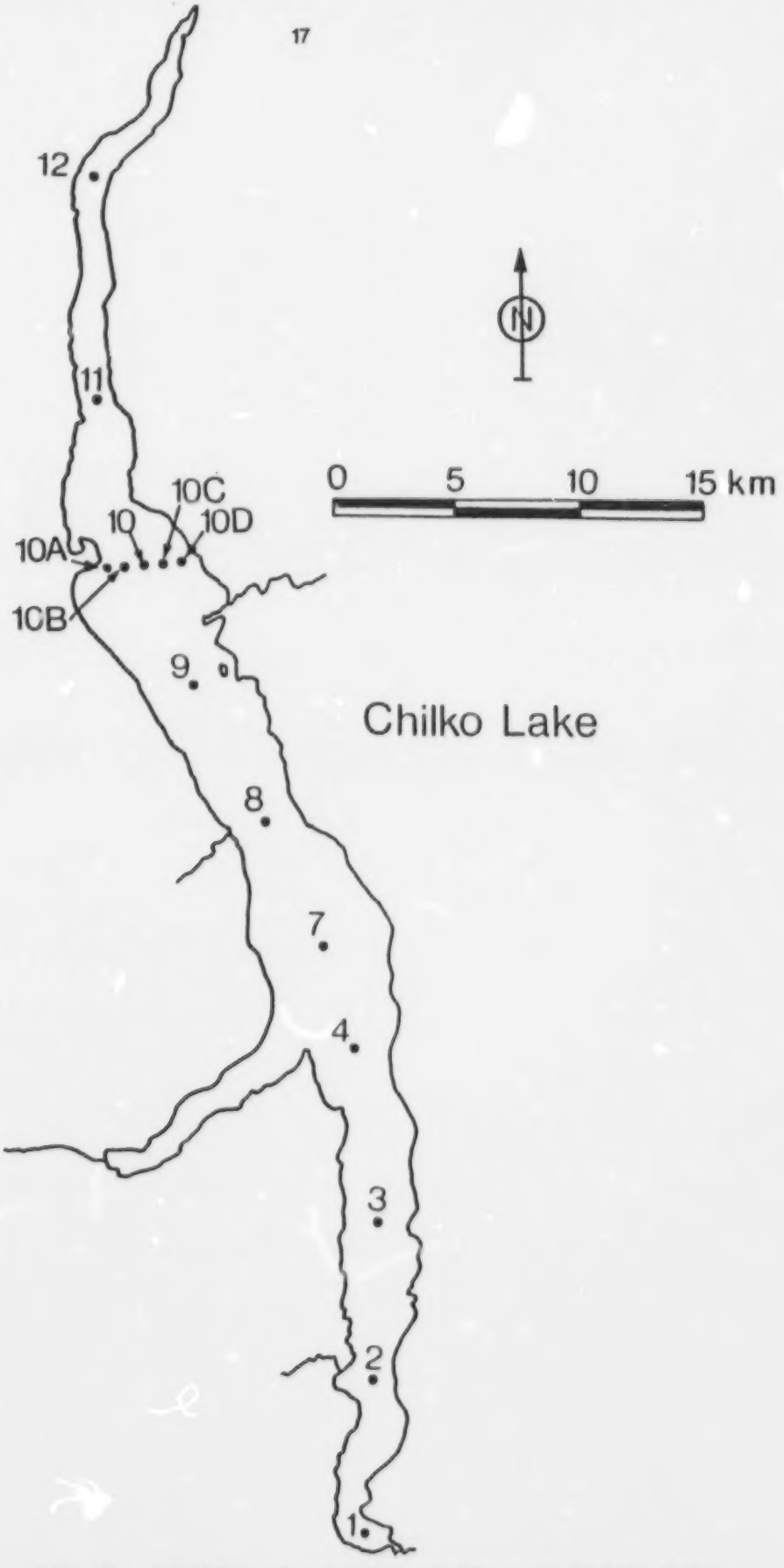

Fig. 3. Location of sampling stations at Chilko Lake.

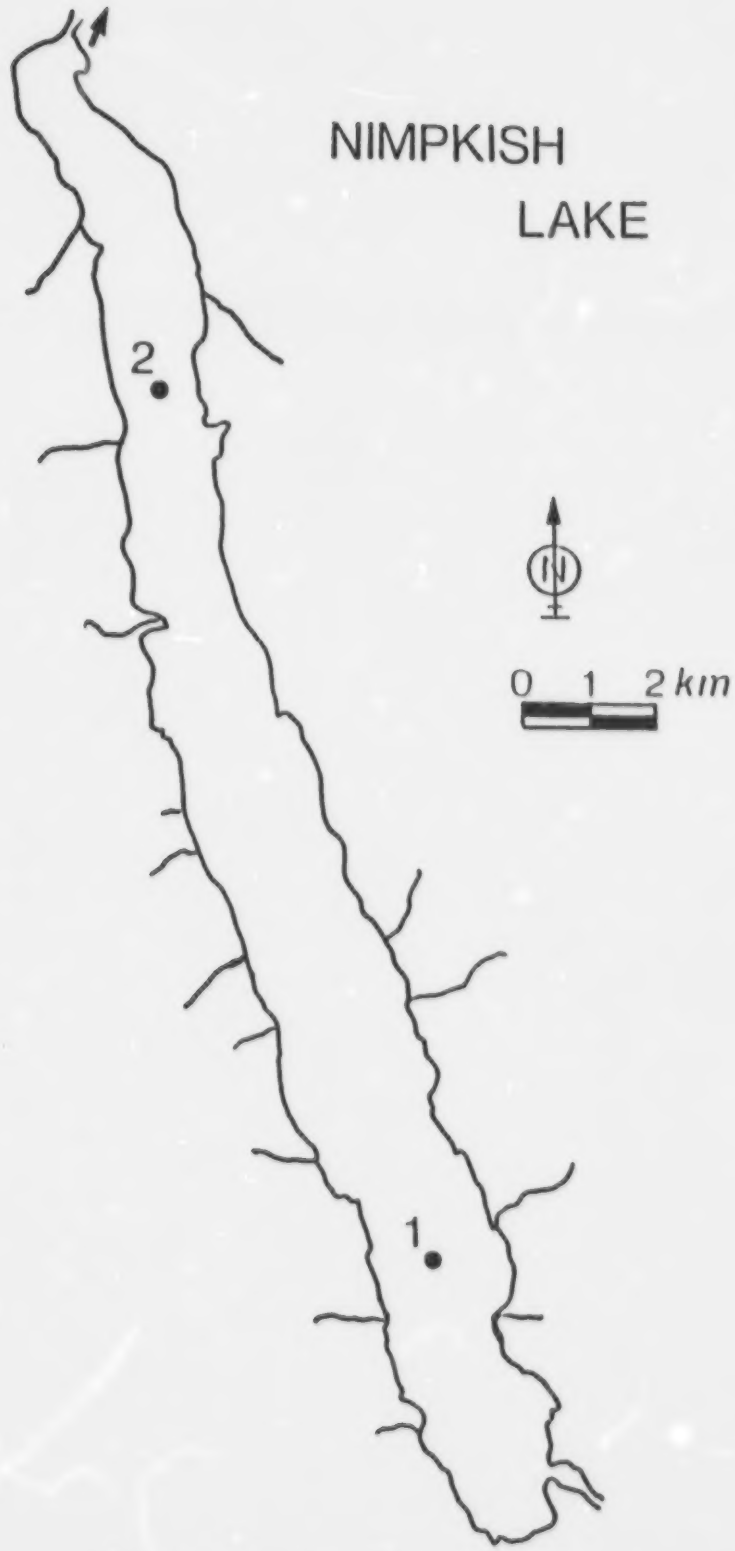

Fig. 4. Location of sampling stations at Nimpkish Lake.

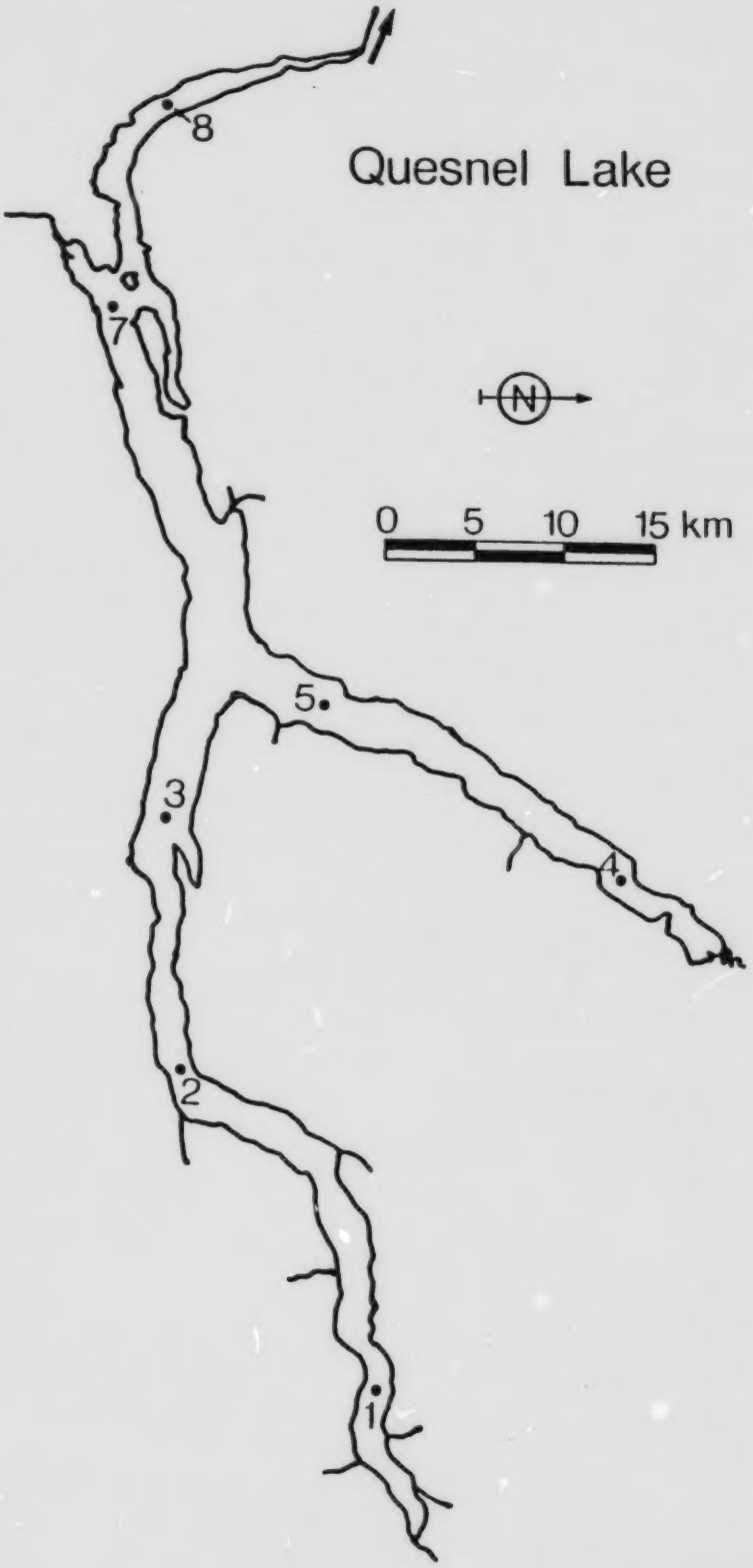

Fig. 5. Location of sampling stations at Quesnel Lake.

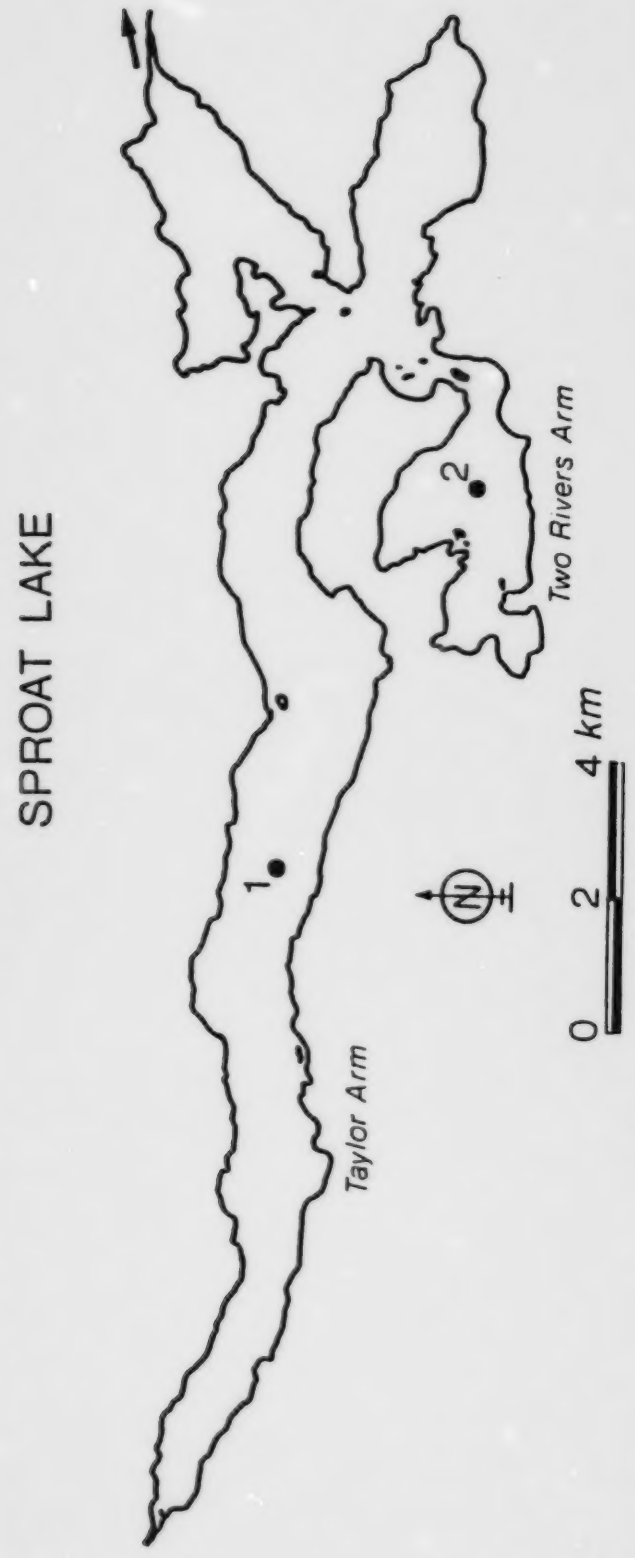

Fig. 6. Location of sampling stations at Sproat Lake

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Table 1. 1986 sampling dates.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
Apr						23	
May	13	13	13	27	27	28	29
Jun	10	10	10	24	24	25	26
Jul						14	14
Jul	8	8	8	22	22	23	24
Jul						31	31
Aug	6	6	6	19	19	11	11
Aug						20	21
Sep	3	3	3	16	16	17	18
Oct	8	8	8	21	21	22	22
Nov						18	18

Table 2. Variation in surface temperature (^{o}C) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
Apr						7.8	
May	5.5	5.1	5.6	7.8	9.4	13.6	15.2
Jun	15.2	17.0	15.4	12.0	12.6	18.6	18.8
Jul						18.2	19.3
Jul	16.9	17.5	16.6	15.3	14.3	20.0	21.9
Jul						20.4	21.9
Aug	19.1	20.7	20.3	17.8	16.5	23.1	23.5
Aug						22.5	22.4
Sep	19.6	20.4	20.4	16.9	16.6	19.0	19.5
Oct	13.4	14.0	14.1	13.9	14.2	15.1	15.2
Nov						10.8	10.9
$\bar{X}$	16.6	17.6	17.0	14.6	14.4	16.9	18.7

Table 3. Variation in mean epilimnetic temperature (^{o}C) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
Apr						6.5	
May	5.4	4.7	5.2	7.6	8.9	11.7	
Jun	14.8	15.7	14.8	12.0	12.7	17.5	17.8
Jul						18.9	
Jul	16.0	15.9	14.5	15.5	14.7	20.0	20.6
Jul						19.5	20.3
Aug	18.7	19.8	19.6			22.3	22.4
Aug						21.9	22.2
Sep	18.6	20.3	19.8	17.0	16.5	18.3	19.0
Oct	13.4	14.0	13.2	14.0	14.1	15.1	15.1
Nov						10.8	11.0
$\bar{X}$	16.0	16.8	16.1	14.4	14.2	16.1	18.6

Table 4. Variation in depth of maximum stability (m) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
Apr						*14.5	
May	U	U	U	U	U	7.3	7.3
Jun	3.7	8.6	6.8	22.8	19.2	7.8	8.1
Jul						9.5	10.0
Jul	10.3	11.7	18.0	25.8	14.6	8.7	9.5
Jul						9.2	10.4
Aug	6.5	7.0	7.1			8.0	10.0
Aug						9.7	7.8
Sep	8.4	7.4	7.8	24.0	26.7	12.8	11.3
Oct	13.3	14.3	18.2	35.2	30.8	12.3	12.5
Nov						17.1	14.5
$\bar{X}$	8.6	9.5	11.5	26.2	22.2	10.4	10.1

Table 5. Variation in Secchi depth (m) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
Apr						10.5	
May	11.0	11.0	11.0	6.0	6.8	11.5	12.0
Jun	2.5	3.5	9.0	8.5	7.0	7.0	12.0
Jul						6.5	11.5
Jul	7.0	8.5	10.0	7.5	7.0	7.3	11.9
Jul						8.2	11.8
Aug	8.0	10.2	10.5	6.5	8.5	9.8	12.2
Aug						11.1	12.5
Sep	8.4	8.1	8.9	6.0	6.3	10.4	12.2
Oct	8.5	8.5	8.5	10.6	11.5	13.8	14.7
Nov						6.8	10.5
$\bar{X}$	7.0	7.9	9.5	7.4	7.6	10.1	12.5

Table 6. Variation in compensation depth (m) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
Apr						17.5	
May	17.9	22.3	17.6	9.0	8.3	15.9	18.3
Jun	6.6	7.6	14.7	9.6	8.5	15.0	18.5
Jul						16.1	22.5
Jul	11.2	11.4	14.4	10.0	10.2	17.1	21.4
Jul						18.1	22.5
Aug	10.8	13.5	13.8	9.2	7.7	19.9	22.5
Aug						18.4	20.1
Sep	11.0	9.5	12.8	8.5	8.8	20.5	19.2
Oct	13.9	13.9	13.0	11.1	10.7	22.8	24.3
$\bar{X}$	10.9	11.6	14.0	9.5	9.0	18.1	20.6

Table 7. Variation in mean extinction coefficient (k_e) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
Apr						0.26	
May	0.23	0.19	0.23	0.49	0.50	0.27	0.24
Jun	0.68	0.60	0.29	0.41	0.50	0.28	0.23
Jul						0.26	0.19
Jul	0.39	0.35	0.29	0.42	0.41	0.26	0.20
Jul						0.24	0.19
Aug	0.41	0.34	0.32	0.46	0.54	0.22	0.20
Aug						0.24	0.22
Sep	0.39	0.52	0.33	0.50	0.46	0.21	0.22
Oct	0.30	0.30	0.33	0.39	0.40	0.19	0.18
$\bar{X}$	0.43	0.42	0.31	0.44	0.47	0.24	0.21

Table 8. Variation in mean epilimnetic pH during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Sproat-1	Sproat-2
Apr				6.7	
May	6.5	6.6		6.8	7.1
Jun	7.1	7.1	7.3	7.2	7.2
Jul				7.6	7.7
Jul	7.2	7.2	7.3	7.3	7.2
Jul				6.8	7.5
Aug	7.3	7.2	7.3	7.6	7.7
Aug				7.2	7.2
Sep	7.5	7.6	7.6	7.6	7.5
Oct	7.2	7.6	7.5	7.5	7.4
Nov				7.4	7.4
$\bar{X}$	7.2	7.3	7.4	7.2	7.4

Table 9. Variation in mean epilimnetic total alkalinity (mg/L $CaCO_3$) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Sproat-1	Sproat-2
Apr				23.98	
May	24.10	23.15		24.15	24.74
Jun	16.18	19.72	23.15	24.60	20.05
Jul	18.47	20.81	21.31	25.64	25.64
Aug	19.57	18.92	20.51		
Aug				25.39	22.04
Sep	23.40	27.13	28.13	28.28	27.01
Oct	18.42	18.42	19.57	34.35	37.08
Nov				24.65	26.52
$\bar{X}$	19.65	21.46	22.88	26.77	26.36

Table 10. Variation in mean epilimnetic dissolved inorganic carbon (mg/L) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Sproat-1	Sproat-2
Apr				9.50	
May	11.51	10.33		8.39	7.36
Jun	4.76	5.61	6.24	6.46	5.52
Jul	5.12	5.87	5.85	6.92	6.97
Aug	5.30	5.20	5.50		
Aug				7.02	6.14
Sep	6.05	6.87	7.11	7.22	6.97
Oct	5.23	4.73	5.06	8.99	9.98
Nov				6.63	7.07
$\bar{X}$	5.65	6.00	6.03	7.67	7.16

Table 11. Variation in mean epilimnetic total dissolved nitrogen (µg N/L) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
Apr						543	
May	366	327	314	224	203	222	155
Jun	579	512	405	334	233	292	200
Jul						232	160
Jul	194	186	189	141	185	129	157
Jul						207	119
Aug	341	406	348	240	148	109	125
Aug						202	206
Sep	148	158	141	149	151	123	172
Oct	278	280	262	155	146	134	142
Nov						240	228
$\bar{X}$	307	306	267	207	177	218	168

Table 12. Variation in mean epilimnetic nitrate (µg N/L) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
Apr						22	
May	111	112	112	47	50	20	<1
Jun	110	102	100	39	36	29	2
Jul						2	4
Jul	95	107	121	22	27	<1	<1
Jul						<1	<1
Aug	61	60	68	18	25	4	4
Aug						<1	<1
Sep	40	33	34	<1	15	<1	<1
Oct	35	34	29	24	25	3	3
Nov						4	4
$\bar{X}$	72	71	75	22	28	10	2

Table 13. Variation in mean epilimnetic ammonia (µg N/L) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
Apr						5	
May	<4	<4	<4	<4	6	8	4
Jun	<4	<4	<4	<4	5	14	6
Jul						18	4
Jul	10	9	9	7	5	5	9
Jul						8	11
Aug	7	10	6	6	4	5	4
Aug						<4	4
Sep	22	17	12	7	5	4	<4
Oct	6	8	11	9	10	4	5
Nov						8	7
$\bar{X}$	10	10	8	6	6	7	5

Table 14. Variation in mean epilimnetic total phosphorus (µg P/L) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
Apr						2.0	
May	<1.0	<1.0	1.2	1.8	2.2	1.3	3.0
Jun	1.5	2.0	2.0	3.0	3.7	4.0	1.3
Jul						2.3	<1.0
Jul	1.5	1.3	1.7	3.0	2.0	3.7	2.0
Jul						2.3	<1.0
Aug	1.3	1.0	<1.0	5.0	3.3	1.7	2.3
Aug						1.2	<1.0
Sep	2.0	3.5	2.0	4.0	5.0	1.5	1.0
Oct				1.7	1.7	2.5	2.2
Nov						2.1	1.8
$\bar{X}$	1.5	1.7	1.6	3.3	3.2	2.1	1.6

Table 15. Variation in mean epilimnetic particulate phosphorus (µg P/L) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
May	1.0	0.9	1.2	0.4	0.7	0.8	0.5
Jun	0.5	1.0	1.0	1.6	1.8	3.5	0.9
Jul						1.7	0.6
Jul	2.4	2.1	1.5	1.4	0.6	1.2	0.5
Jul						2.1	1.0
Aug	0.9	0.8	1.0	3.3	1.3	1.4	2.0
Aug						1.5	1.1
Sep	1.5	0.6	1.1	2.5	1.8	1.1	0.6
Oct	1.1	0.9	0.8	1.1	1.0	1.8	1.1
Nov						1.6	2.1
$\bar{X}$	1.3	1.1	1.1	1.9	1.3	1.7	0.9

Table 16. Variation in mean epilimnetic particulate carbon (µg C/L) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
Apr							
May	193	107	128	158	151	185	156
Jun	192	192	133	159	143	255	154
Jul						226	196
Jul	138	116	109	185	112	400	209
Jul						461	229
Aug	203	157	186	257	115	281	211
Aug						369	240
Sep	276	226	244	165	174	381	368
Oct	275	269	296	189	176	220	236
Nov						174	199
$\bar{X}$	213	182	184	187	143	295	235

Table 17. Variation in mean epilimnetic particulate nitrogen (µg N/L) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
Apr							
May	17	12	16	16	19	23	20
Jun	27	31	17	19	22	40	20
Jul						31	26
Jul	21	19	18	28	19	45	25
Jul						44	26
Aug	28	22	25	42	22	30	24
Aug						35	26
Sep	26	35	29	26	25	43	20
Oct	39	46	61	19	19	26	19
Nov						26	25
$\bar{X}$	27	29	27	26	21	35	22

Table 18. Variation in mean epilimnetic total chlorophyll (µg/L) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
Apr						1.39	
May	0.59	0.46	0.36	0.19	1.07	1.03	0.63
Jun	1.19	1.02	0.31	0.94	1.10	1.52	0.47
Jul						1.82	0.50
Jul	0.53	0.71	0.62	2.49	0.91	1.13	0.50
Jul						1.00	0.56
Aug	1.07	0.83	1.06	2.95	1.63	0.70	0.50
Aug						0.46	0.44
Sep	0.50	1.02	1.18	2.83	2.14	0.79	0.58
Oct	1.46	1.56	1.27	1.64	2.04	0.80	0.82
Nov						1.23	1.22
$\bar{X}$	0.88	0.96	0.84	2.05	1.50	1.04	0.61

Table 19. Variation in mean epilimnetic chlorophyll (µg/L) (0.8-2.0 µm size fraction) during 1986.

Lake	Adams-1	Adams-2	Adams-3	Sproat-1	Sproat-2
Jun	*0.46	*0.50	*0.27	*0.47	*0.15
Jul	0.28	0.34	0.33	*0.29	*0.16
Aug	0.42	0.38	0.46	0.19	0.22
Sep	0.45	0.62	0.35	0.43	0.24
Oct	0.38	0.36	0.26	0.44	0.47
Nov				0.42	0.52
$\bar{X}$	0.39	0.44	0.36	0.36	0.27

*0.8-3.0 µm

Table 20. Variation in mean epilimnetic chlorophyll (µg/L) (>2.0 µm size fraction) during 1986.

Lake	Adams-1	Adams-2	Adams-3	Sproat-1	Sproat-2
Jun	*0.36	*0.37	*0.14	*0.88	*0.23
Jul	0.34	0.31	0.27	*0.29	*0.17
Aug	0.54	0.36	0.54	<0.31	<0.25
Sep	0.67	0.50	0.29	0.30	<0.25
Oct	0.62	1.02	0.85	0.32	0.39
Nov				0.62	0.42
$\bar{X}$	0.52	0.48	0.41	0.38	0.27

*>3.0 um

Table 21. Variation in mean epilimnetic bacterial numbers ($X10^6$/mL) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
May	0.25	0.29	0.35	0.44	0.39		
Jun	0.58	0.55	0.53	0.38	0.61		
Jul	0.47	0.52	0.35	0.48	0.37	0.97	0.66
Jul						1.31	1.10
Aug	0.37	0.34	0.33	0.40	0.49	0.57	0.48
Aug						0.52	0.48
Sep	0.40	0.37	0.38	0.36	0.26	0.47	0.58
Oct	0.37	1.15	0.60	0.34	0.34	0.45	0.51
Nov						0.43	0.43
$\bar{X}$	0.43	0.52	0.42	0.40	0.41	0.61	0.57

Table 22. Variation in mean epilimnetic TDS (mg/L) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
May	44.4	119.3	42.9	22.5	20.2	26.8	
Jun	41.3	45.3	52.4	30.2	32.4	32.0	32.9
Jul						34.0	30.8
Jul	30.4	36.3	39.8	21.3	23.3		
Jul						36.0	37.3
Aug	36.0	36.7	40.7	19.3	18.0	38.7	35.3
Aug						28.7	30.0
Sep	31.1	30.0	31.6	53.5	36.1	36.1	30.1
Oct	24.8	29.3	30.8	26.5	28.5	35.5	41.2
Nov						48.8	46.1
$\bar{X}$	33.8	40.3	39.6	30.4	27.1	34.2	34.7

Table 23. Variation in primary production (mg $C/m^3/h$) during 1986.

	>0.2 µm		0.2-3.0 µm		>3.0 µm	
LAKE	Sproat-1	Sproat-2	Sproat-1	Sproat-2	Sproat-1	Sproat-2
Apr	0.40		0.05		0.35	
May	1.24	0.64	0.61	0.27	0.63	0.37
Jun	1.51	0.50	0.39	0.28	1.12	0.23
Jul	0.99	0.48	*0.31	*0.10	**0.68	**0.38
Aug	0.72	0.56	*0.25	*0.44	**0.47	**0.12
Sep	0.48	0.84	*0.32	*0.22	**0.16	**0.62
$\bar{X}$	0.98	0.57	0.35	0.26	0.63	0.31

*0.2-2.0 µm
**>2.0 µm

Table 24. Variation in integrated hourly primary production (mg $C/m^2/h$), daily primary production (mg $C/m^2/d$) and primary production per unit of light (mg C/Einstein) during 1986.

	mg $C/m^2/h$		mg $C/m^2/d$		mgC/Einstein	
LAKE	Sproat-1	Sproat-2	Sproat-1	Sproat-2	Sproat-1	Sproat-2
Apr	7.07		66.54		2.36	
May	19.70	11.66	158.39	150.42	3.77	3.00
Jun	22.71	9.24	232.64	71.48	4.70	2.27
Jul	16.94	10.23	147.71	89.96	3.60	2.01
Aug	13.28	11.27	114.94	125.18	2.83	3.14
Sep	9.76	16.24	140.56	156.09	6.46	5.60
$\bar{X}$	16.14	11.16	150.12	109.70	3.83	2.92

Table 25. Variation in mean epilimnetic algal volume (mm^3/m^3) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
May	314	224	193	907	604	5942	5713
Jun	832	628	420	2188	1920	4543	1684
Jul						5684	1738
Jul	757	567	465	1326	1019	4414	2922
Jul						3739	2326
Aug	66	536	655			1347	1620
Aug						1836	1373
Sep	854	523	392	14109	10103	1590	1216
Oct	842	783	652	1843	1518	1576	966
Nov						1457	1268
$\bar{X}$	642	572	487	5496	4040	2999	1847

Table 26. Variation in mean epilimnetic algal carbon (mg C/m^3) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
May	35	24	20	89	54	403	395
Jun	82	73	50	150	137	349	136
Jul						501	158
Jul	84	69	61	126	87	339	224
Jul						289	184
Aug	86	82	83			122	139
Aug						156	116
Sep	100	92	67	890	641	141	108
Oct	108	121	109	142	117	130	92
Nov						135	123
$\bar{X}$	88	82	68	367	268	240	151

Table 27. Variation in zooplankton biomass (mg dry weight/m^3) during 1986.

LAKE	Adams-1	Adams-2	Adams-3	Nimpkish-1	Nimpkish-2	Sproat-1	Sproat-2
Apr							
May	12.9	7.3	8.8	11.0	4.0	3.3	7.2
Jun	2.8	12.0	12.9	8.5	6.6	8.2	7.5
Jul							
Jul	9.1	9.7	13.6	1.7	1.1	5.6	2.3
Jul						7.2	5.8
Aug	6.1	17.2	6.0	8.6	6.8	9.8	3.8
Aug						8.0	3.7
Sep	13.4	9.5	18.8	12.2	11.2	5.2	7.5
Oct	7.4	5.8	7.6	10.6	2.7	10.1	6.7
Nov						5.2	8.8
$\bar{X}$	8.2	11.0	12.1	8.5	5.8	7.2	6.1

Table 28. Variation in zooplankton ash-free dry weight (mg/m^3) during 1986.

LAKE	Adam	Adam	Adam	Nimpkish-1	Nimpkish-2	Sproat	Sproat
Apr							
May	11.9	6.8		5.1	3.0	2.7	4.7
Jun	2.4	10.9	1	7.3	4.0	6.8	6.7
Jul							
Jul	8.6	9.2	12.1	1.5	1.1	5.1	2.3
Jul						6.4	5.3
Aug	5.7	13.2	4.4	6.3	5.0	8.9	3.8
Aug						7.5	3.3
Sep	12.6	8.8	15.3	3.4	5.9	4.8	7
Oct	6.4	5.1	6.7	9.8	1.8	8.4	5.8
Nov						4.2	7.6
$\bar{X}$	7.6	9.6	10.4	5.3	3.7	6.2	5.4

Table 29. Physical, chemical and biological data from Adams Lake, Stn. 1, May 13, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	5.5	5.5	5.5	5.1
TDS (mg/L)		44.4		
pH	6.5			
T. Alk. (mg/L $CaCO_3$)	24.10			
DIC (mg/L)	11.51			
TDN (µg N/L)	328	448	224	249
Ammonia (µg N/L)	<4	<4	<4	<4
Nitrate (µg N/L)	110	111	111	111
PN (µg N/L)	14	16	24	14
PC (µg C/L)	116	263	236	156
TP (µg P/L)	<1.0	<1.0	1.0	<1.0
PP (µg P/L)	0.9	0.9	1.2	1.0
Bacteria ($X10^6$/mL)	0.22	0.31	0.24	0.22
Chlorophyll (µg/L)	0.64	0.69	0.65	0.39
Alg. Volume (mm^3/m^3)	317	403	326	207
Alg. Carbon (mg C/m^3)	37	42	38	21

Table 30. Physical, chemical and biological data from Adams Lake, Stn. 1, June 10, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	14.8	10.9	8.0	4.6
TDS (mg/L)		41.3		
pH	7.1			
T. Alk. (mg/L $CaCO_3$)	16.18			
DIC (mg/L)	4.76			
TDN (µg N/L)	506		382	
Ammonia (µg N/L)	<4	<4	12	<4
Nitrate (µg N/L)	111	110	113	118
PN (µg N/L)	24	29	22	14
PC (µg C/L)	184	199	166	96
TP (µg P/L)	1.0	2.0	2.0	1.0
PP (µg P/L)	0.9	1.1	0.9	<0.2
Bacteria ($X10^6$/mL)	0.58	0.48	0.49	0.18
Chlorophyll (µg/L)a	1.11	1.27	0.25	<0.11
Chlorophyll (µg/L)b	0.41	0.52	0.11	<0.11
Chlorophyll (µg/L)c	0.25	0.46	<0.11	<0.11
Alg. Volume (mm^3/m^3)	832	667	680	272
Alg. Carbon (mg C/m^3)	82	78	73	26

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 31. Physical, chemical and biological data from Adams Lake, Stn. 1, July 8, 1986.

Depth (m)	1	6	12	40
Temperature (°C)	16.8	14.4	11.2	4.6
TDS (mg/L)		30.4		
pH	7.2			
T. Alk. (mg/L $CaCO_3$)	18.47			
DIC (mg/L)	5.12			
TDN (µg N/L)	211	177	165	191
Ammonia (µg N/L)	<4	7	7	6
Nitrate (µg N/L)	92	98	112	131
PN (µg N/L)		25	18	19
PC (µg C/L)		162	113	97
TP (µg P/L)	1.0	2.0	2.0	1.0
PP (µg P/L)	2.0	2.8	2.4	1.2
Bacteria ($X10^6$/mL)	0.38	0.56	0.38	0.44
Chlorophyll (µg/L)a	0.58	0.75	0.25	<0.10
Chlorophyll (µg/L)b	0.27	0.33	0.22	<0.10
Chlorophyll (µg/L)c	0.31	0.41	0.31	<0.10
Alg. Volume (mm^3/m^3)	800	714	464	172
Alg. Carbon (mg C/m^3)	86	82	53	15

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 32. Physical, chemical and biological data from Adams Lake, Stn. 1, August 6, 1986.

Depth (m)	1	3	6	40
Temperature (°C)	19.0	18.9	17.9	4.7
TDS (mg/L)			36.0	
pH	7.3			
T. Alk. (mg/L $CaCO_3$)	19.57			
DIC (mg/L)	5.30			
TDN (µg N/L)	343	279	400	242
Ammonia (µg N/L)	5		9	<4
Nitrate (µg N/L)	60	59	63	118
PN (µg N/L)	24	24	34	10
PC (µg C/L)	176	206	226	79
TP (µg P/L)	<1.0	1.0	2.0	2.0
PP (µg P/L)	0.8	1.1	0.8	0.8
Bacteria ($X10^6$/mL)	0.39	0.34	0.32	0.24
Chlorophyll (µg/L)a	0.88	0.91	1.42	0.12
Chlorophyll (µg/L)b	0.33	0.38	0.56	<0.12
Chlorophyll (µg/L)c	0.43	0.57	0.61	<0.12
Alg. Volume (mm^3/m^3)	541	570	548	182
Alg. Carbon (mg C/m^3)	89	84	84	19

a >0.8 µm b 0.8-2.0 µm c >2.0µm

Table 33. Physical, chemical and biological data from Adams Lake, Stn. 1, September 3, 1986.

Depth (m)	2	9	14	40
Temperature (^{o}C)	19.5	16.7	14.1	4.7
TDS (mg/L)		31.1		
pH	7.5			
T. Alk. (mg/L $CaCO_3$)	23.40			
DIC (mg/L)	6.05			
TDN (µg N/L)	135	160	163	193
Ammonia (µg N/L)	28	15	18	6
Nitrate (µg N/L)	32	49	90	128
PN (µg N/L)	26	28	33	37
PC (µg C/L)	276	225	130	131
TP (µg P/L)	2.0	2.0	1.0	1.0
PP (µg P/L)	1.7	1.3	0.5	0.2
Bacteria ($X10^6$/mL)	0.40	0.53	0.31	0.51
Chlorophyll (µg/L)a	0.44	0.55	0.21	0.12
Chlorophyll (µg/L)b	0.56	0.34	0.31	<0.12
Chlorophyll (µg/L)c	0.62	0.72	<0.12	<0.12
Alg. Volume (mm^3/m^3)	854	994	999	270
Alg. Carbon (mg C/m^3)	100	132	94	22

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 34. Physical, chemical and biological data from Adams Lake, Stn. 1, October 8, 1986.

Depth (m)	1	8	14	40
Temperature (^{o}C)	13.4	13.4	11.3	4.9
TDS (mg/L)		24.8		
pH	7.2			
T. Alk. (mg/L $CaCO_3$)	18.42			
DIC (mg/L)	5.27			
TDN (µg N/L)	265	291	214	347
Nitrate (µg N/L)	36	34	33	111
PN (µg N/L)	28	51	37	4
PC (µg C/L)	313	237	239	116
PP (µg P/L)	1.2	1.0	1.0	0.5
Bacteria ($X10^6$/mL)	0.39	0.34	0.34	0.24
Chlorophyll (µg/L)a	1.48	1.44	1.25	0.14
Chlorophyll (µg/L)b	0.39	0.36	0.21	<0.12
Chlorophyll (µg/L)c	0.52	0.71	0.41	<0.25
Alg. Volume (mm^3/m^3)	1192	492	472	343
Alg. Carbon (mg C/m^3)	139	77	65	29

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 35. Physical, chemical and biological data from Adams Lake, Stn. 2, May 13, 1986.

Depth (m)	1	5	10	40
Temperature (°C)	4.9	4.9	4.8	3.9
TDS (mg/L)		119.3		
pH	6.6			
T. Alk. (mg/L $CaCO_3$)	23.15			
DIC (mg/L)	10.33			
TDN (µg N/L)	388	448	224	249
Ammonia (µg N/L)	<4	<4	<4	<4
Nitrate (µg N/L)	110	111	111	114
PN (µg N/L)	14	11	10	14
PC (µg C/L)	108	95	79	145
TP (µg P/L)	<1.0	1.0	<1.0	<1.0
PP (µg P/L)	1.0	0.9	0.9	0.7
Bacteria ($X10^6$/mL)	0.35	0.27	0.32	0.20
Chlorophyll (µg/L)	0.65	0.54	0.46	0.18
Alg. Volume (mm^3/m^3)	193	230	273	200
Alg. Carbon (mg C/m^3)	23	25	29	19

Table 36. Physical, chemical and biological data from Adams Lake, Stn. 2, June 10, 1986.

Depth (m)	1	5	10	40
Temperature (°C)	16.1	14.2	9.0	4.5
TDS (mg/L)		45.3		
pH	7.1			
T. Alk. (mg/L $CaCO_3$)	19.72			
DIC (mg/L)	5.61			
TDN (µg N/L)	415	609	485	338
Ammonia (µg N/L)	<4	<4	<4	<4
Nitrate (µg N/L)	101	103	106	114
PN (µg N/L)	28	33	18	12
PC (µg C/L)	173	210	122	74
TP (µg P/L)	2.0	2.0	2.0	2.0
PP (µg P/L)	0.8	1.2	0.7	<0.2
Bacteria ($X10^6$/mL)	0.61	0.48	0.54	0.29
Chlorophyll (µg/L)a	0.67	1.37	0.75	0.13
Chlorophyll (µg/L)b	0.29	0.70	0.51	<0.11
Chlorophyll (µg/L)c	0.15	0.59	0.20	<0.11
Alg. Volume (mm^3/m^3)	773	484	488	203
Alg. Carbon (mg C/m^3)	83	64	56	20

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 37. Physical, chemical and biological data from Adams Lake, Stn. 2, July 8, 1986.

Depth (m)	1	6	11	40
Temperature (°C)	16.9	15.7	13.6	4.6
TDS (mg/L)		36.3		
pH	7.2			
T. Alk. (mg/L $CaCO_3$)	20.81			
DIC (mg/L)	5.87			
TDN (µg N/L)	198	177	183	184
Ammonia (µg N/L)	9	13	5	<4
Nitrate (µg N/L)	105	104	111	145
PN (µg N/L)	15	24	18	13
PC (µg C/L)	100	138	111	86
TP (µg P/L)	1.0	1.0	2.0	1.0
PP (µg P/L)	1.7	2.7	2.0	1.1
Bacteria ($X10^6$/mL)	0.65	0.47	0.45	0.23
Chlorophyll (µg/L)a	0.56	0.86	0.70	0.12
Chlorophyll (µg/L)b	0.31	0.39	0.31	<0.10
Chlorophyll (µg/L)c	0.24	0.31	0.38	<0.10
Alg. Volume (mm^3/m^3)	613	596	493	150
Alg. Carbon (mg C/m^3)	76	70	60	14

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 38. Physical, chemical and biological data from Adams Lake, Stn. 2, August 6, 1986.

Depth (m)	1	3	9	40
Temperature (°C)	20.5	20.0	14.3	
TDS (mg/L)		36.7		
pH	7.2			
T. Alk. (mg/L $CaCO_3$)	18.92			
DIC (mg/L)	5.20			
TDN (µg N/L)	388	423	230	306
Ammonia (µg N/L)	9	11	8	<4
Nitrate (µg N/L)	60	60	75	119
PN (µg N/L)	19	25	26	9
PC (µg C/L)	137	177	182	69
TP (µg P/L)	<1.0	1.0	1.0	<1.0
PP (µg P/L)	0.8	0.8	1.3	0.6
Bacteria ($X10^6$/mL)	0.37	0.31	0.27	0.17
Chlorophyll (µg/L)a	0.80	0.86	1.27	0.21
Chlorophyll (µg/L)b	0.33	0.43	0.48	<0.12
Chlorophyll (µg/L)c	0.38	0.33	0.71	<0.12
Alg. Volume (mm^3/m^3)	551	520	466	244
Alg. Carbon (mg C/m^3)	72	91	76	25

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 39. Physical, chemical and biological data from Adams Lake, Stn. 2, September 3, 1986.

Depth (m)	1	5	9	40
Temperature (°C)	20.3	20.2	16.7	4.7
TDS (mg/L)		30.0		
pH	7.6			
T. Alk. (mg/L $CaCO_3$)	27.13			
DIC (mg/L)	6.87			
TDN (µg N/L)	162	153	169	199
Ammonia (µg N/L)	12	2	17	5
Nitrate (µg N/L)	36	30	50	118
PN (µg N/L)	32	39	31	17
PC (µg C/L)	222	231	221	136
TP (µg P/L)	6.0	1.0	2.0	2.0
PP (µg P/L)	0.5	0.8	0.9	0.3
Bacteria ($X10^6$/mL)	0.42	0.55	0.14	0.37
Chlorophyll (µg/L)a	0.96	1.08	1.61	0.22
Chlorophyll (µg/L)b	0.56	0.68	0.49	<0.12
Chlorophyll (µg/L)c	0.41	0.59	0.99	<0.12
Alg. Volume (mm^3/m^3)	466	580	815	240
Alg. Carbon (mg C/m^3)	82	102	142	19

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 40. Physical, chemical and biological data from Adams Lake, Stn. 2, October 8, 1986.

Depth (m)	1	6	16	40
Temperature (°C)	14.0	13.9	11.4	4.7
TDS (mg/L)		29.3		
pH	7.6			
T. Alk. (mg/L $CaCO_3$)	18.42			
DIC (mg/L)	4.73			
TDN (µg N/L)	316	245	261	301
Nitrate (µg N/L)	34	34	53	115
PN (µg N/L)	44	47	47	19
PC (µg C/L)	321	272	216	118
PP (µg P/L)	0.9	0.9	0.6	0.5
Bacteria ($X10^6$/mL)	0.85	1.45	0.58	0.33
Chlorophyll (µg/L)a	1.33	1.79	0.91	0.17
Chlorophyll (µg/L)b	0.43	0.28	0.16	<0.12
Chlorophyll (µg/L)c	0.62	1.42	0.48	<0.25
Alg. Volume (mm^3/m^3)	644	923	558	284
Alg. Carbon (mg C/m^3)	116	127	100	25

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 41. Physical, chemical and biological data from Adams Lake, Stn. 3, May 13, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	5.4	5.0	4.8	3.9
TDS (mg/L)		42.9		
TDN (µg N/L)	272	358	349	278
Ammonia (µg N/L)	<4	<4	<4	<4
Nitrate (µg N/L)	111	112	113	113
PN (µg N/L)	13	20	18	13
PC (µg C/L)	120	148	139	104
TP (µg P/L)	<1.0	1.0	2.0	<1.0
PP (µg P/L)	1.0	1.5	1.5	1.0
Bacteria (X10^{6}/mL)	0.36	0.33	0.42	0.27
Chlorophyll (µg/L)	0.34	0.38	0.41	0.33
Alg. Volume (mm^{3}/m^{3})	293	234	158	86
Alg. Carbon (mg C/m^{3})	29	23	17	12

Table 42. Physical, chemical and biological data from Adams Lake, Stn. 3, June 10, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	15.1	13.9	8.4	4.6
TDS (mg/L)		52.4		
pH	7.3			
T. Alk. (mg/L $CaCO_3$)	23.15			
DIC (mg/L)	6.24			
TDN (µg N/L)	559	251	848	657
Ammonia (µg N/L)	<4	<4	<4	<4
Nitrate (µg N/L)	99	100	103	115
PN (µg N/L)	15	18	20	10
PC (µg C/L)	115	151	160	86
TP (µg P/L)	2.0	2.0	2.0	2.0
PP (µg P/L)	0.4	0.6	0.4	0.3
Bacteria (X10^{6}/mL)	0.49	0.57	0.40	0.37
Chlorophyll (µg/L)a	0.29	0.33	0.52	0.23
Chlorophyll (µg/L)b	0.18	0.25	0.39	<0.11
Chlorophyll (µg/L)c	<0.11	<0.11	0.21	<0.11
Alg. Volume (mm^{3}/m^{3})	390	451	332	265
Alg. Carbon (mg C/m^{3})	47	53	46	25

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 43. Physical, chemical and biological data from Adams Lake, Stn. 3, July 8, 1986.

Depth (m)	1	8	12	40
Temperature (°C)	15.7	13.5	12.4	4.9
TDS (mg/L)		39.8		
pH	7.3			
T. Alk. (mg/L $CaCO_3$)	21.31			
DIC (mg/L)	5.85			
TDN (µg N/L)	179	215	173	175
Ammonia (µg N/L)	11	9	6	<4
Nitrate (µg N/L)	116	121	126	156
PN (µg N/L)	15	23	15	9
PC (µg C/L)	98	132	98	79
TP (µg P/L)	2.0	1.0	2.0	1.0
PP (µg P/L)	1.2	2.0	1.4	1.2
Bacteria ($X10^6$/mL)	0.38	0.47	0.20	0.20
Chlorophyll (µg/L)a	0.54	0.71	0.61	0.26
Chlorophyll (µg/L)b	0.41	0.38	0.2	<0.10
Chlorophyll (µg/L)c	0.21	0.36	0.24	0.16
Alg. Volume (mm^3/m^3)	497	548	350	284
Alg. Carbon (mg C/m^3)	64	69	50	25

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 44. Physical, chemical and biological data from Adams Lake, Stn. 3, August 6, 1986.

Depth (m)	1	3	10	40
Temperature (°C)	20.1	19.7		
TDS (mg/L)		40.7		
pH	7.3			
T. Alk. (mg/L $CaCO_3$)	20.51			
DIC (mg/L)	5.50			
TDN (µg N/L)	291	406	301	331
Ammonia (µg N/L)	8	4	5	<4
Nitrate (µg N/L)	68	68	94	122
PN (µg N/L)	26	25	21	9
PC (µg C/L)	198	173	151	67
TP (µg P/L)	<1.0	<1.0	<1.0	<1.0
PP (µg P/L)	0.8	1.3	1.1	0.7
Bacteria ($X10^6$/mL)	0.32	0.34	0.27	0.34
Chlorophyll (µg/L)a	1.17	0.95	1.05	0.21
Chlorophyll (µg/L)b	0.44	0.49	0.56	<0.12
Chlorophyll (µg/L)c	0.49	0.59	0.48	<0.12
Alg. Volume (mm^3/m^3)	560	750	433	189
Alg. Carbon (mg C/m^3)	78	88	63	18

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 45. Physical, chemical and biological data from Adams Lake, Stn. 3, September 3, 1986.

Depth (m)	2	7	9	40
Temperature (^{o}C)	20.2	19.0	16.3	4.8
TDS (mg/L)		31.6		
pH	7.6			
T. Alk. (mg/L $CaCO_3$)	28.13			
DIC (mg/L)	7.11			
TDN (µg N/L)	141		164	192
Ammonia (µg N/L)	10	14	17	11
Nitrate (µg N/L)	34		63	120
PN (µg N/L)	26	33	32	18
PC (µg C/L)	205	283	242	187
TP (µg P/L)	2.0	2.0	3.0	2.0
PP (µg P/L)	1.1	1.1	1.2	0.5
Bacteria ($X10^6$/mL)	0.39	0.38	0.19	0.27
Chlorophyll (µg/L)a	0.76	1.61	0.77	0.19
Chlorophyll (µg/L)b	0.44	0.26	0.68	<0.12
Chlorophyll (µg/L)c	0.34	0.24	0.69	<0.12
Alg. Volume (mm^3/m^3)	492	292	574	396
Alg. Carbon (mg C/m^3)	76	58	90	32

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 46. Physical, chemical and biological data from Adams Lake, Stn. 3, October 8, 1986.

Depth (m)	1	8	18	40
Temperature (^{o}C)	14.0	13.7	11.2	4.7
TDS (mg/L)		30.8		
pH	7.5			
T. Alk. (mg/L $CaCO_3$)	19.57			
DIC (mg/L)	5.06			
TDN (µg N/L)	272	241	272	327
Nitrate (µg N/L)	21	22	44	106
PN (µg N/L)	62	64	57	27
PC (µg C/L)	311	295	282	124
PP (µg P/L)	0.6	1.0	0.8	0.4
Bacteria ($X10^6$/mL)	0.54	0.56	0.70	0.42
Chlorophyll (µg/L)a	1.13	1.57	1.10	0.22
Chlorophyll (µg/L)b	0.43	0.22	0.14	<0.12
Chlorophyll (µg/L)c	0.68	1.36	0.52	<0.25
Alg. Volume (mm^3/m^3)	663	749	545	254
Alg. Carbon (mg C/m^3)	115	123	90	24

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 47. Physical, chemical and biological data from Nimpkish Lake, Stn. 1, May 27, 1986.

Depth (m)	1	3	5	40
Temperature (^{o}C)	7.8	7.7	7.6	7.2
TDS (mg/L)			22.5	
TDN (µg N/L)	244	198	206	249
Ammonia (µg N/L)	<4	<4	<4	<4
Nitrate (µg N/L)	49	48	46	46
PN (µg N/L)	16	15	16	19
PC (µg C/L)	128	147	166	190
TP (µg P/L)	<1.0	2.0	2.0	2.0
PP (µg P/L)	0.4	0.4	0.4	0.2
Bacteria ($X10^{6}$/mL)	0.51	0.40	0.42	0.41
Chlorophyll ($\mu g/L)_3$	0.23	0.21	0.16	0.15
Alg. Volume (mm^3/m^3)	935	786	1000	316
Alg. Carbon (mg C/m^3)	78	68	120	34

Table 48. Physical, chemical and biological data from Nimpkish Lake, Stn.1, June 24, 1986.

Depth (m)	1	3	5	40
Temperature (^{o}C)	12.0	12.0	12.0	7.4
TDS (mg/L)			30.2	
TDN (µg N/L)	472	330	199	366
Ammonia (µg N/L)	<4	4	<4	5
Nitrate (µg N/L)	39	39	39	51
PN (µg N/L)	20	17	19	12
PC (µg C/L)	121	159	198	93
TP (µg P/L)	3.0	3.0	3.0	2.0
PP (µg P/L)	1.6	1.5	1.6	1.3
Bacteria ($X10^{6}$/mL)	0.56	0.33	0.26	0.23
Chlorophyll ($\mu g/L)_3$	0.95	0.95	0.91	0.05
Alg. Volume (mm^3/m^3)	2328	1908	2328	541
Alg. Carbon (mg C/m^3)	160	134	158	40

Table 49. Physical, chemical and biological data from Nimpkish Lake, Stn. 1, July 22, 1986.

Depth (m)	1	3	5	40
Temperature (^{o}C)	15.6	15.5	15.5	7.8
TDS (mg/L)			21.3	
TDN (µg N/L)	158	152	114	132
Ammonia (µg N/L)	13	5	<4	6
Nitrate (µg N/L)	22	22	23	45
PN (µg N/L)	27	29	27	12
PC (µg C/L)	200	188	168	91
TP (µg P/L)	3.0	3.0	3.0	2.0
PP (µg P/L)	0.8	1.7	1.7	0.2
Bacteria (X10^{6}/mL)	0.55	0.49	0.40	0.24
Chlorophyll (µg/L)	2.54	2.54	2.40	0.14
Alg. Volume (mm^{3}/m^{3})	1695	959	1323	691
Alg. Carbon (mg C/m^{3})	156	94	130	47

Table 50. Chemical and biological data from Nimpkish Lake, Stn. 1, August 19, 1986.

Depth (m)	1	3	5	40
TDS (mg/L)			19.3	
TDN (µg N/L)	231	153	335	193
Ammonia (µg N/L)	10	4	<4	<4
Nitrate (µg N/L)	18	17	18	51
PN (µg N/L)	46	44	37	13
PC (µg C/L)	263	281	227	77
TP (µg P/L)	4.0	4.0	7.0	3.0
PP (µg P/L)	3.5	3.4	3.1	0.9
Bacteria (X10^{6}/mL)	0.31	0.63	0.26	0.21
Chlorophyll (µg/L)	2.85	3.24	2.76	0.12
Alg. Volume (mm^{3}/m^{3})				
Alg. Carbon (mg C/m^{3})				

Table 51. Physical, chemical and biological data from Nimpkish Lake, Stn. 1, September 16, 1986.

Depth (m)	1	3	5	40
Temperature (^{o}C)	17.0	17.0	17.0	7.9
TDS (mg/L)			53.5	
TDN (µg N/L)	165	139	144	191
Ammonia (µg N/L)	<4	13	<4	<4
Nitrate (µg N/L)	<1	<1	<1	33
PN (µg N/L)	28	28	22	14
PC (µg C/L)	177	183	136	98
TP (µg P/L)	5.0	4.0	3.0	1.0
PP (µg P/L)	2.6	2.5	2.4	0.9
Bacteria (X10^{6}/mL)	0.47	0.38	0.24	0.28
Chlorophyll (µg/L)	3.07	2.89	2.54	0.29
Alg. Volume (mm^3/m^3)	15935	12820	13571	994
Alg. Carbon (mg C/m^3)	1005	817	848	65

Table 52. Physical, chemical and biological data from Nimpkish Lake, Stn. 1, October 21, 1986.

Depth (m)	1	3	5	40
Temperature (^{o}C)	13.8	14.0	14.0	9.1
TDS (mg/L)			26.5	
TDN (µg N/L)	175	154	136	189
Nitrate (µg N/L)	28	22	23	49
PN (µg N/L)	23	18	17	13
PC (µg C/L)	208	180	179	157
TP (µg P/L)	1.0	3.0	1.0	2.0
PP (µg P/L)	1.2	1.1	0.9	1.1
Bacteria (X10^{6}/mL)	0.32	0.40	0.29	0.27
Chlorophyll (µg/L)	1.27	1.96	1.70	0.27
Alg. Volume (mm^3/m^3)	1886	1946	1695	477
Alg. Carbon (mg C/m^3)	144	153	128	34

Table 53. Physical, chemical and biological data from Nimpkish Lake, Stn. 2, May 27, 1986.

Depth (m)	1	3	5	40
Temperature (^{o}C)	9.1	9.1	9.1	7.8
TDS (mg/L)			20.2	
TDN (µg N/L)	206	182	187	237
Ammonia (µg N/L)	6	4	<4	11
Nitrate (µg N/L)	49	49	49	52
PN (µg N/L)	22	20	21	13
PC (µg C/L)	167	151	172	114
TP (µg P/L)	3.0	2.0	2.0	2.0
PP (µg P/L)	0.7	0.9	0.9	<0.2
Bacteria (X10^{6}/mL)	0.45	0.41	0.37	0.31
Chlorophyll (µg/L)	1.11	1.42	1.65	0.10
Alg. Volume (mm^{3}/m^{3})	864	675	680	195
Alg. Carbon (mg C/m^{3})	77	64	58	17

Table 54. Physical, chemical and biological data from Nimpkish Lake, Stn. 2, June 24, 1986.

Depth (m)	1	3	5	40
Temperature (^{o}C)	12.8	12.7	12.7	7.5
TDS (mg/L)			32.4	
TDN (µg N/L)	279	164	256	192
Ammonia (µg N/L)	<4	<4	6	6
Nitrate (µg N/L)	36	37	38	48
PN (µg N/L)	21	24	20	12
PC (µg C/L)	146	154	129	97
TP (µg P/L)	4.0	4.0	3.0	
PP (µg P/L)	1.9	1.8	1.8	1.1
Bacteria (X10^{6}/mL)	0.57	0.64	0.63	0.20
Chlorophyll (µg/L)	1.14	1.19	0.98	0.07
Alg. Volume (mm^{3}/m^{3})	2127	1508	2124	396
Alg. Carbon (mg C/m^{3})	149	110	152	29

Table 55. Physical, chemical and biological data from Nimpkish Lake, Stn. 2, July 22, 1986.

Depth (m)	1	3	5	40
Temperature (^{o}C)	14.7	14.3	14.2	7.3
TDS (mg/L)			23.3	
TDN (µg N/L)	147	140	126	159
Ammonia (µg N/L)	8	<4	<4	9
Nitrate (µg N/L)	27	27	28	46
PN (µg N/L)	18	19	20	11
PC (µg C/L)	96	119	122	81
TP (µg P/L)	2.0	2.0	2.0	2.0
PP (µg P/L)	0.5	0.6	0.6	<0.2
Bacteria (X10^{6}/mL)	0.50	0.32	0.28	0.23
Chlorophyll (µg/L)	0.93	0.96	0.83	0.22
Alg. Volume (mm^{3}/m^{3})	1123	1106	828	798
Alg. Carbon (mg C/m^{3})	95	93	73	58

Table 56. Chemical and biological data from Nimpkish Lake, Stn. 2, August 19, 1986.

Depth (m)	1	3	5	40
TDS (mg/L)			18.0	
TDN (µg N/L)	135	173	135	220
Ammonia (µg N/L)	<4	5	<4	<4
Nitrate (µg N/L)	25	27	24	52
PN (µg N/L)	22	22	23	
PC (µg C/L)	112	111	122	
TP (µg P/L)	2.0	4.0	4.0	1.0
PP (µg P/L)	1.3	1.2	1.3	0.7
Bacteria (X10^{6}/mL)	0.71	0.44	0.31	0.20
Chlorophyll (µg/L)	1.48	1.75	1.66	0.12
Alg. Volume (mm^{3}/m^{3})				
Alg. Carbon (mg C/m^{3})				

Table 57. Physical, chemical and biological data from Nimpkish Lake, Stn. 2, September 16, 1986

Depth (m)	1	3	5	40
Temperature (^{o}C)	16.6	16.6	16.5	9.6
TDS (mg/L)			36.1	
TDN (µg N/L)	181	143	128	139
Ammonia (µg N/L)	8	<4	<4	14
Nitrate (µg N/L)	14	16	16	32
PN (µg N/L)	22	24	28	15
PC (µg C/L)	133	165	225	99
TP (µg P/L)	2.0	3.0	10.0	2.0
PP (µg P/L)	1.6	1.9	1.9	0.7
Bacteria ($X10^{6}$/mL)	0.27	0.29	0.22	0.28
Chlorophyll ($\mu g/L$)	2.10	1.96	2.36	0.66
Alg. Volume (mm^{3}/m^{3})	11802	10806	7703	4530
Alg. Carbon ($mg\ C/m^{3}$)	748	687	488	293

Table 58. Physical, chemical and biological data from Nimpkish Lake, Stn. 2, October 21, 1986.

Depth (m)	1	3	5	40
Temperature (^{o}C)	14.1	14.1	14.1	8.8
TDS (mg/L)			28.5	
TDN (µg N/L)	132	157	148	178
Nitrate (µg N/L)	25	26	24	74
PN (µg N/L)	19	20	19	10
PC (µg C/L)	159	188	181	114
TP (µg P/L)	2.0	2.0	1.0	1.0
PP (µg P/L)	1.0	1.0	0.9	1.2
Bacteria ($X10^{6}$/mL)	0.29	0.25	0.47	0.42
Chlorophyll ($\mu g/L$)	1.79	2.32	2.00	0.27
Alg. Volume (mm^{3}/m^{3})	1718	1424	1411	526
Alg. Carbon ($mg\ C/m^{3}$)	127	116	108	41

Table 59. Physical, chemical and biological data from Sproat Lake, Stn. 1, April 23, 1986.

Depth (m)	0	3	6	9	12	15	18	21	24	27
Temperature ($^{\circ}C$)	8.0	7.9	7.5	7.2	6.8	6.0	5.6	5.4	5.4	5.3
pH		6.6		6.7						
T. Alk. (mg/L $CaCO_3$)		26.74		21.21						
DIC (mg/L)		11.05		7.95						
TDN (µg N/L)	358	618		474	721	299	388	631	639	539
Ammonia (µg N/L)	<4	<4		<4	7	12	7	4	4	<4
Nitrate (µg N/L)	19	20		23	26	26	27	31	35	36
TP (µg P/L)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0
Chlorophyll ($\mu g/L_3$)	1.16	1.33		1.54	1.54	1.49	1.34	1.11	0.47	0.28
Pr. Prod. (mg $C/m_3/h$)a	0.24	0.48		0.56	0.35	0.16	0.07	0.04	0.03	0.05
Pr. Prod. (mg $C/m^3/h$)b	0.14	0.50		0.41	0.30	0.13	0.11	0.05	0.00	0.00

a Total Primary Production (>0.2 µm)
b Fractionated Primary Production (>3.0 µm)

Table 60. Physical, chemical and biological data from Sproat Lake, Stn. 1, May 28, 1986.

Depth (m)	0	3	6	9	12	15	18	21	24	40
Temperature (^{o}C)	13.2	12.4	11.6	9.6	8.5	7.5	6.8	5.8	5.8	5.8
TDS (mg/L)			26.8							
pH		6.8		6.7			6.7			
T. Alk. (mg/L $CaCO_3$)		24.15		22.40			23.40			
DIC (mg/L)		8.39		8.24			9.43			
TDN (µg N/L)	224	305	138	165	250	154	307	187	234	231
Ammonia (µg N/L)	11	9	<4	<4	<4	6	<4	<4	<4	<4
Nitrate (µg N/L)	28	22	9	16	17	16	17	23	30	41
PN (µg N/L)	23	22	24	20	21	24	21	24	20	20
PC (µg C/L)	205	169	181	149	142	189	179	178	148	82
TP (µg P/L)	1.0	1.0	2.0	2.0	2.0	3.0	2.0	2.0	<1.0	<1.0
PP (µg P/L)	0.6	0.8	0.9	0.8	1.9	1.3	1.9	0.8	0.2	0.5
Chlorophyll ($\mu g/L$)	0.75	0.93	1.40	1.47	1.47	2.59	1.98	2.35	1.37	0.26
Alg. Volume (mm^3/m^3)	6587		7774		3464		2770		1435	
Alg. Carbon (mg C/m^3)	430		526		253		205		110	
Pr. Prod. (mg $C/m^3/h$)a	0.62	1.09	1.37	1.56	1.16	0.72	0.31	0.04	0.00	
Pr. Prod. (mg $C/m^3/h$)b	0.31	0.56	0.60	0.76	0.62	0.36	0.18	0.09	0.00	

a Total Primary Production (>0.2 µm)
b Fractionated Primary Production (>3.0 µm)

Table 61. Physical, chemical and biological data from Sproat Lake, Stn. 1, June 25, 1986.

Depth (m)	0	3	5	9	12	15	18	21	30	40
Temperature (^{o}C)	18.4	17.6	16.4	12.3	10.0	7.8	7.0	6.3	5.8	4.9
TDS (mg/L)			32.0							
pH		7.2		7.2		7.1				
T. Alk. (mg/L $CaCO_3$)		23.60		23.10		21.61				
DIC (mg/L)		6.46		6.42		6.33				
TDN (µg N/L)	219	275	383	171	286	361	136	332	212	242
Ammonia (µg N/L)	16		13	26	9		<4	<4	4	9
Nitrate (µg N/L)	23	25	39	9	33	14	19	25	36	29
PN (µg N/L)	39	40	40	27	41	23	22	20	12	50
PC (µg C/L)	244	252	268	174	251	156	152	153	64	286
TP (µg P/L)	4.0	4.0	4.0	2.0	4.0	3.0	3.0	1.0	<1.0	2.0
PP (µg P/L)	2.4	3.7	4.4	1.6	4.2	1.5	1.2	0.9	0.8	2.4
Chlorophyll (µg/L)a	1.47	1.47	1.61	1.24	1.56	1.98	2.40	1.89	0.49	1.09
Chlorophyll (µg/L)b		0.47		0.41		0.67		0.25		0.07
Chlorophyll (µg/L)c		0.88		0.65		1.39		1.17		0.28
Alg. Volume (mm^3/m^3)		2703		2802		8123	7427	5771	1209	
Alg. Carbon (mg C/m^3)		285		218		545	516	403	89	
Pr. Prod. (mg $C/m^3/h$)d	1.92	2.52	2.39	1.04	0.41	0.23		0.07	0.00	
Pr. Prod. (mg $C/m^3/h$)e	1.21	1.59	1.46	0.90	0.29	0.19		0.06	0.11	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>3.0 µm)

Table 62. Physical, chemical and biological data from Sproat Lake, Stn. 1, July 14, 1986.

Depth (m)	1	3	5	20	40
Temperature (^{o}C)	18.0	17.6	17.3	6.6	4.9
TDS (mg/L)			34.0		
pH			7.6		
TDN (µg N/L)	223	208	264	258	173
Ammonia (µg N/L)	22	14	17	6	<4
Nitrate (µg N/L)	2	<1	2	23	40
PN (µg N/L)	28	31	34	18	10
PC (µg C/L)	211	228	240	102	88
TP (µg P/L)	2.0	2.0	3.0	<1.0	<1.0
PP (µg P/L)	0.8	1.6	2.7	0.5	0.7
Chlorophyll (µg/L)	1.70	1.92	1.83	1.08	0.41
Alg. Volume (mm^3/m^3)	5500	5771	6245	1860	1064
Alg. Carbon (mg C/m^3)	498	555	558	151	79

Table 63. Physical, chemical and biological data from Sproat Lake, Stn. 1, July 23, 1986.

Depth (m)	0	3	6	10	12	14	16	22	30	40
Temperature (^{o}C)	20.3	20.1	19.5	14.2	10.9	9.4	8.4	7.7	5.2	4.8
pH		7.3		7.3			6.9			
T. Alk. (mg/L $CaCO_3$)		25.64		21.41			20.91			
DIC (mg/L)		6.92		5.79			6.66			
TDN (µg N/L)	93	147	146	130	141	175	158	140	150	186
Ammonia (µg N/L)	4	6	4	5	<4	4	11	5	<4	22
Nitrate (µg N/L)	<1	<1	<1	<1	<1	<1	12	24	17	7
PN (µg N/L)	29	50	55	48	26	51	21	14	12	56
PC (µg C/L)	239	469	492	384	188	463	152			494
TP (µg P/L)	3.0	4.0	4.0	3.0	3.0	3.0	1.0	1.0	1.0	1.0
PP (µg P/L)	0.9	1.2	1.4	1.3	2.4	1.8	0.5	<0.2	0.5	1.2
Bacteria ($X10^6$/mL)		1.37		0.57		0.67		0.40		1.54
Chlorophyll (µg/L)a	1.03	0.96	1.40	1.13	1.27	1.20	1.57	1.00	0.70	1.35
Chlorophyll (µg/L)b	0.29			0.54	0.44	0.43		0.36		
Chlorophyll (µg/L)c	0.29			0.48	0.58	0.50		0.49		
Alg. Volume (mm^3/m^3)	3174	2856	5505	6511	5979	2459	1856	1732	1356	4173
Alg. Carbon (mg C/m^3)	276	226	418	465	442	205	142	131	97	330
Pr. Prod. (mg $C/m^3/h$)d	1.29	1.38	1.55	0.92	0.66	0.29	0.24	0.00	0.00	
Pr. Prod. (mg $C/m^3/h$)e	0.66	0.95	1.11	0.69	0.44	0.22	0.19	0.00	0.00	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>2.0 µm)

Table 64. Physical, chemical and biological data from Sproat Lake, Stn. 1, July 31, 1986.

Depth (m)	1	3	5	16	40
Temperature (^{o}C)	19.5	19.2	19.0	9.5	4.9
TDS (mg/L)			36.0		
pH			6.8		
TDN (µg N/L)	247	183	191	119	116
Ammonia (µg N/L)	17	<4	4	5	8
Nitrate (µg N/L)	<1	<1	<1	2	37
PN (µg N/L)	40	49	44	29	11
PC (µg C/L)	377	541	466	206	64
TP (µg P/L)	2.0	3.0	2.0	<1.0	2.0
PP (µg P/L)	1.7	2.7	1.9	1.3	0.7
Bacteria (X10^{6}/mL)	1.27	1.50	1.16	0.75	0.88
Chlorophyll (µg/L)	0.90	1.05	1.05	1.75	0.36
Alg. Volume (mm^3/m^3)	3459	3822	3938	4345	829
Alg. Carbon (mg C/m^3)	268	302	297	309	60

Table 65. Physical, chemical and biological data from Sproat Lake, Stn. 1, August 11, 1986.

Depth (m)	1	3	5	16	40
Temperature (^{o}C)	22.9	22.5	20.8	9.8	7.3
TDS (mg/L)			38.7		
pH	7.6				
TDN (µg N/L)	121	98	108	108	148
Ammonia (µg N/L)	<4	<4	6	5	<4
Nitrate (µg N/L)	4	4	4	4	42
PN (µg N/L)	28	31	30	29	
PC (µg C/L)	256	313	274	215	
TP (µg P/L)	1.0	2.0	2.0	5.0	<1.0
PP (µg P/L)	1.4	1.4	1.5	1.4	0.8
Bacteria (X10^{6}/mL)	0.55	0.57	0.59	0.34	
Chlorophyll (µg/L)	0.66	0.68	0.75	1.53	0.53
Alg. Volume (mm^3/m^3)	1307	1947	788	4662	967
Alg. Carbon (mg C/m^3)	129	162	74	336	74

Table 66. Physical, chemical and biological data from Sproat Lake, Stn. 1, August 20, 1986.

Depth (m)	0	3	5	8	14	16	18	24	30	40
Temperature (^{o}C)	22.6	22.2	22.1	20.7	10.4	8.6	7.6	6.3	5.6	5.0
TDS (mg/L)			28.7							
pH		7.2		7.2			7.0			
T. Alk. (mg/L $CaCO_3$)		25.39		25.39			23.70			
DIC (mg/L)		7.02		7.01			7.24			
TDN (µg N/L)	127	138	282	259	200	226	306	127	308	222
Ammonia (µg N/L)	<4	<4	<4	<4		<4	<4	<4	<4	<4
Nitrate (µg N/L)	<1	<1	<1	<1	<1	1	8	25	31	42
PN (µg N/L)	31	24	45	41	31	28	26	20	19	13
PC (µg C/L)	268	260	496	453	254	242	184	126	141	101
TP (µg P/L)	1.0	2.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	<1.0
PP (µg P/L)	1.1	1.2	1.6	2.1	1.7	1.5	1.2	0.9	1.1	0.9
Bacteria (X10^{6}/mL)	0.63	0.48	0.48	0.51	0.47	0.39	0.34	0.23	0.60	0.61
Chlorophyll (µg/L)a	0.39	0.51	0.29	0.66	1.12	1.97	1.66	1.40	1.05	0.48
Chlorophyll (µg/L)b		0.17		0.21		0.53		0.29	0.22	
Chlorophyll (µg/L)c		<0.31		<0.31		0.95		0.93	0.66	
Alg. Volume (mm^3/m^3)	1862	1789	1015	1555	2960	3602	3774	4358	2984	1462
Alg. Carbon (mg C/m^3)	163	152	101	137	230	265	272	301	208	103
Pr. Prod. (mg $C/m^3/h$)d	0.42	0.99	1.02	0.99	0.35	0.37	0.28	0.04	0.00	
Pr. Prod. (mg $C/m^3/h$)e	0.32	0.64	0.72	0.59	0.25	0.30	0.17	0.00	0.00	

a >0.8 µm b 0.8-2.0 µm c >2.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>2.0 µm)

Table 67. Physical, chemical and biological data from Sproat Lake, Stn. 1, September 17, 1986.

Depth (m)	1	5	10	12	16	20	24	28	30	40
Temperature (^{o}C)	18.7	18.6	18.6	16.9	10.0	7.5	6.5	6.0	5.8	5.1
TDS (mg/L)		36.1								
pH	7.7			7.5			7.2			
T. Alk. (mg/L $CaCO_3$)	26.64			29.92			4			
DIC (mg/L)	6.73			7.71			8.60			
TDN (µg N/L)	121	131	117	122	120	208	145	170	196	165
Ammonia (µg N/L)	<4	5	5	<4	5	5	<4	9	17	<4
Nitrate (µg N/L)	<1	<1	<1	<1	5	16	27	33	40	39
PN (µg N/L)	76	31	35	29	24	23	33	13	12	18
PC (µg C/L)	549	314	371	291	257	195	253	128	148	179
TP (µg P/L)	1.0	1.0	1.0	3.0	2.0	1.0	<1.0	1.0	2.0	1.0
PP (µg P/L)	1.0	1.0	1.0	1.4	1.0	1.0	0.7	0.7	0.7	0.6
Bacteria ($X10^6$/mL)	0.52	0.52	0.46	0.37	0.35	0.26	0.18	0.14	0.40	0.15
Chlorophyll (µg/L)a	0.56	0.76	0.63	1.20	0.83	1.79	1.74	1.30	1.12	0.41
Chlorophyll (µg/L)b		0.37		0.49		0.58		0.24	0.19	
Chlorophyll (µg/L)c		<0.25		0.34		0.80		0.93	1.79	
Alg. Volume (mm^3/m^3)	1492	1968	1195	1705	1985	3068	3400	3076	1654	898
Alg. Carbon (mg C/m^3)	132	165	108	159	158	223	241	207	114	61
Pr. Prod. (mg $C/m^3/h$)d	1.02	0.75	0.42	0.00	0.19	0.12	0.08	0.11	0.00	
Pr. Prod. (mg $C/m^3/h$)e	0.41	0.25	0.10	0.00	0.14	0.00	0.00	0.00	0.00	

a >0.8 µm b 0.8-2.0 µm c >2.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>2.0 µm)

Table 68. Physical, chemical and biological data from Sproat Lake, Stn. 1, October 22, 1986.

Depth (m)	0	3	5	10	14	16	18	22	28	40
Temperature (^{o}C)	15.1	15.1	15.1	15.1	9.8	8.5	7.8	6.9	5.9	5.1
TDS (mg/L)			35.3							
pH		7.6			7.4					
T. Alk. (mg/L $CaCO_3$)		37.58			29.12					
DIC (mg/L)		10.13			7.86					
TDN (µg N/L)	115	127	136	156	129	155	145	133	121	162
Ammonia (µg N/L)	5	<4	<4	<4	8	6	<4	5	5	6
Nitrate (µg N/L)	3	3	3	3	4	2	2	14	33	47
PN (µg N/L)	28	25	26	25	11	28	23	22	16	20
PC (µg C/L)	235	212	226	206	71	209	174	163	146	165
TP (µg P/L)	1.0	4.0	3.0	2.0	2.0	2.0	4.0	2.0	1.0	1.0
PP (µg P/L)	1.6	1.5	1.5	2.8	1.6	2.4	1.6	1.7	1.4	1.1
Bacteria ($X10^{6}$/mL)	0.43	0.40	0.65	0.32	0.36	0.19	0.26	0.21	0.30	0.21
Chlorophyll (µg/L)a	0.69	0.73	0.91	0.86	1.45	1.66	1.48	1.20	1.30	0.31
Chlorophyll (µg/L)b		0.41		0.46	0.66		0.61		0.17	
Chlorophyll (µg/L)c		0.28		0.35	0.62		0.83		1.00	
Alg. Volume (mm^3/m^3)	1622	858	1669	716	3019	3136	3232	2914	2693	1353
Alg. Carbon (mg C/m^3)	126	83	143	69	227	243	231	214	188	92

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 69. Physical, chemical and biological data from Sproat Lake, Stn. 1, November 18, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	40
Temperature (^{o}C)	10.8	10.8	10.8	10.8	10.8	10.8	10.8	9.7	8.5	5.2
TDS (mg/L)			48.8							
pH		7.4					7.3			
T. Alk. (mg/L $CaCO_3$)		24.68					24.63			
DIC (mg/L)		6.52					6.73			
TDN (µg N/L)	289	183	206	253	220	288	243	286	211	175
Ammonia (µg N/L)	<4	7	5	<4	8	14	11	22	10	12
Nitrate (µg N/L)	4	4	4	3	4	5	5	9	5	34
PN (µg N/L)	27	24	28	28	25	24	24	20	22	13
PC (µg C/L)	186	174	182	184	173	161	157	136	160	70
TP (µg P/L)	3.0	2.0	3.0	2.0	2.0	2.0	1.0	2.0	1.0	2.0
PP (µg P/L)	1.1	1.5	1.4	1.2	1.3	2.8	2.3	1.4	1.8	1.6
Bacteria ($X10^6$/mL)		0.44		0.54		0.32		0.21	0.60	
Chlorophyll (µg/L)a	1.08	1.10	1.17	1.45	1.40	1.30	1.13	1.10	1.10	0.49
Chlorophyll (µg/L)b		0.41		0.44		0.41		0.26	0.22	
Chlorophyll (µg/L)c		0.59		0.62		0.66		0.95	0.91	
Alg. Volume (mm^3/m^3)		1699		1217		1454		1568	2052	
Alg. Carbon (mg C/m^3)		156		118		130		130	151	

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 70. Chemical and biological data from Sproat Lake, Stn. 2, May 29, 1986.

Depth (m)	0	3	6	9	12	15	18	21	24	40
pH		7.1		7.0			6.9			
T. Alk. (mg/L $CaCO_3$)		24.74		24.84			25.29			
DIC (mg/L)		7.36		7.52			8.31			
TDN (µg N/L)	126	143	195	154	187	212	237	210	218	244
Ammonia (µg N/L)	4	<4	4	<4	<4	15	<4	<4	<4	<4
Nitrate (µg N/L)	<1	<1	<1	<1	<1	<1	18	13	23	39
PN (µg N/L)	22	19	21	22	22	24	28	22	25	15
PC (µg C/L)	168	143	156	176	159	172	207	152	171	122
TP (µg P/L)	1.0	2.0	6.0	4.0	<1.0	<1.0	<1.0	<1.0	2.0	<1.0
PP (µg P/L)	0.5	0.5	0.6	0.5	0.8	1.1	1.8	1.6	1.8	0.3
Chlorophyll ($\mu g/L$)	0.65	0.52	0.72	1.09	1.47	1.98	2.82	2.21	2.54	1.37
Alg. Volume (mm^3/m^3)	5286		6214		5638		5038		3186	
Alg. Carbon (mg C/m^3)	358		418		408		346		229	
Pr. Prod. (mg $C/m^3/h$)a	0.28	0.47	0.53	0.53	0.56	0.70	0.51	0.17	0.17	
Pr. Prod. (mg $C/m^3/h$)b	0.06	0.19	0.27	0.31	0.42	0.42	0.28	0.21	0.09	

a Total Primary Production (>0.2µm).
b Fractionated Primary Production (>3.0 µm)

Table 71. Physical, chemical and biological data from Sproat Lake, Stn. 2, June 26, 1986.

Depth (m)	0	3	6	9	15	18	20	23	30	40
Temperature (^{o}C)	18.6	18.2	16.6	12.9	8.2	7.2	6.8	6.1	5.4	4.9
TDS (mg/L)			32.9							
pH		7.2		7.2	7.2					
T. Alk. (mg/L $CaCO_3$)		20.05		24.50	25.04					
DIC (mg/L)		5.52		6.86	7.16					
TDN (µg N/L)	119	263	219	235	267	249	222	143	159	241
Ammonia (µg N/L)	9	<4	4	<4	<4	6	<4	<4	6	7
Nitrate (µg N/L)	2	2	1	2	3	11	19	23	29	37
PN (µg N/L)	20	18	21	20	20	27	22	20	18	13
PC (µg C/L)	178	123	162	160	142	169	156	136	116	63
TP (µg P/L)	<1.0	1.0	2.0	2.0	1.0	4.0	1.0	2.0	1.0	4.0
PP (µg P/L)	0.8	0.9	1.1	1.1	1.0	1.7	1.3	1.3	1.3	1.0
Chlorophyll (µg/L)a	0.47	0.47	0.47	0.59	1.11	1.61	1.98	2.07	1.51	0.39
Chlorophyll (µg/L)b		0.15		0.20	0.41		0.51		0.38	
Chlorophyll (µg/L)c		0.23		0.31	0.59		1.34		1.11	
Alg. Volume (mm^3/m^3)		1264		1642	2147		4959		3439	
Alg. Carbon (mg C/m^3)		121		132	155		344		236	
Pr. Prod. (mg $C/m^3/h$)d	0.45	0.44	0.49	0.41	0.45	0.43	0.25	0.14	0.00	
Pr. Prod. (mg $C/m^3/h$)e	0.20	0.22	0.24	0.13	0.26	0.18	0.14	0.03	0.00	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>3.0 µm)

Table 72. Physical, chemical and biological data from Sproat Lake, Stn. 2, July 14, 1986.

Depth (m)	1	3	5	20	40
Temperature (^{o}C)	19.1	18.8	18.6	7.1	5.0
TDS (mg/L)			30.8		
pH			7.7		
TDN (µg N/L)	129	221	130	136	123
Ammonia (µg N/L)	<4	<4	5	<4	<4
Nitrate (µg N/L)	9	2	<1	12	39
PN (µg N/L)	27	25		23	16
PC (µg C/L)	204	189		196	118
TP (µg P/L)	<1.0	<1.0	1.0	<1.0	<1.0
PP (µg P/L)	0.2	0.8	0.7	<0.2	0.5
Chlorophyll ($\mu g/L)_3$	0.63	0.43	0.43	1.96	0.66
Alg. Volume (mm^3/m^3)	2239	1177	1798	2641	1766
Alg. Carbon (mg C/m^3)	199	121	155	194	123

Table 73. Physical, chemical and biological data from Sproat Lake, Stn. 2, July 24, 1986.

Depth (m)	0	3	5	12	16	18	20	26	30	40
Temperature (^{o}C)	21.8	20.7	19.4	12.1	9.2	8.2	7.2	6.0	5.7	5.0
pH		7.2		7.2			7.2			
T. Alk. (mg/L $CaCO_3$)		25.64		25.39			24.89			
DIC (mg/L)		6.97		7.05			7.12			
TDN (µg N/L)	158	153	160	152	131	130	139	160	106	78
Ammonia (µg N/L)	10	11	6	<4	9	11	5	<4	<4	<4
Nitrate (µg N/L)	<1	<1	<1	<1	<1	14	12	27	9	5
PN (µg N/L)	24	27	24	23	21	38	29	19	21	24
PC (µg C/L)	200	215	213	188	199	317	207	134	208	253
TP (µg P/L)	1.0	2.0	3.0	3.0	2.0	2.0	2.0	3.0	2.0	1.0
PP (µg P/L)	0.6	0.6	0.4	0.7	0.8	1.0	0.7	0.9	0.5	0.4
Bacteria (X10^{6}/mL)		0.38	0.94		0.39		0.76		0.59	
Chlorophyll (µg/L)a	0.46	0.49	0.54	0.58	0.93	1.57	1.83	1.48	0.75	0.54
Chlorophyll (µg/L)b	0.17		0.14	0.22			0.46		0.55	
Chlorophyll (µg/L)c	0.13		0.21	0.34			1.22		0.28	
Alg. Volume (mm^3/m^3)	2030	2436	2844	4377	3316	6562	4134	1725	2924	2076
Alg. Carbon (mg C/m^3)	178	189	212	318	244	443	283	127	208	152
Pr. Prod. (mg C/m^3/h)d	0.61	0.63	0.62	0.31	0.28	0.46	0.15	0.13	0.08	
Pr. Prod. (mg C/m^3/h)e	0.53	0.50	0.54	0.22	0.23	0.37	0.13	0.08	0.05	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>2.0 µm)

Table 74. Physical, chemical and biological data from Sproat Lake, Stn. 2, July 31, 1986.

Depth (m)	1	3	5	22	40
Temperature (^{o}C)	20.3	19.7	19.6	6.6	5.1
TDS (mg/L)			37.3		
pH		7.5			
TDN (µg N/L)	209	69	79	143	82
Ammonia (µg N/L)	20	10	4	6	4
Nitrate (µg N/L)	<1	<1	<1	3	30
PN (µg N/L)	25	24	28	27	14
PC (µg C/L)	217	221	248	203	100
TP (µg P/L)	<1.0	<1.0	<1.0	2.0	<1.0
PP (µg P/L)	1.0	0.9	1.1	1.2	1.0
Bacteria (X10^{6}/mL)	1.20	1.03	1.07	1.00	0.97
Chlorophyll (µg/L)	0.56	0.59	0.54	1.97	0.71
Alg. Volume (mm^3/m^3)	2059	2586	2333	2588	1238
Alg. Carbon (mg C/m^3)	173	198	181	193	89

Table 75. Physical, chemical and biological data from Sproat Lake, Stn. 2, August 11, 1986.

Depth (m)	1	3	5	22	40
Temperature (^{o}C)	23.1	22.4	20.8	8.3	7.6
TDS (mg/L)			35.3		
pH	7.7				
TDN (µg N/L)	129	132	114	111	123
Ammonia (µg N/L)	4	<4	4	<4	<4
Nitrate (µg N/L)	4	5	3	7	39
PN (µg N/L)	23	24	24	23	13
PC (µg C/L)	218	218	198	157	82
TP (µg P/L)	1.0	2.0	4.0	<1.0	<1.0
PP (µg P/L)	1.7	2.3	2.1	1.1	0.8
Bacteria (X10^{6}/mL)	0.46	0.45	0.52	0.31	
Chlorophyll (µg/L)	0.54	0.44	0.51	1.97	0.85
Alg. Volume (mm^3/m^3)	1566	1925	1371	2944	1636
Alg. Carbon (mg C/m^3)	141	156	121	217	113

Table 76. Physical, chemical and biological data from Sproat Lake, Stn. 2, August 21, 1986.

Depth (m)	0	1	3	5	8	14	21	24	30	40
Temperature (^{o}C)	22.3	22.3	22.2	22.2	20.7	10.4	7.2	6.8	6.2	5.4
TDS (mg/L)				30.0						
pH		7.1		7.2		7.1				
T. Alk. (mg/L $CaCO_3$)		22.16		21.91		24.50				
DIC (mg/L)		6.25		6.02		7.11				
TDN (µg N/L)	248	185	242	203	152	226	225	202	199	225
Ammonia (µg N/L)	<4	<4	6	<4	<4	<4	<4	<4	<4	<4
Nitrate (µg N/L)	<1	<1	<1	<1	<1	<1	8	13	25	40
PN (µg N/L)	25	22	26	26	31	26	28	28	20	13
PC (µg C/L)	217	189	269	220	307	214	262	246	145	92
TP (µg P/L)	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	2.0
PP (µg P/L)	1.0	1.0	1.0	1.2	1.3	1.1	1.2	1.1	1.0	1.0
Bacteria (X10^{6}/mL)	0.44	0.62	0.38		0.47	0.23	0.37	0.20	0.17	0.23
Chlorophyll (µg/L)a	0.43	0.44	0.29	0.43	0.59	1.17	1.92	2.63	2.10	0.83
Chlorophyll (µg/L)b		0.21		0.22		0.29	0.71		0.63	
Chlorophyll (µg/L)c		<0.25		<0.25		0.79	1.12		1.15	
Alg. Volume (mm^3/m^3)	1028	593	1163	826	1629	2999	2885	3153	2337	1773
Alg. Carbon (mg C/m^3)	91	68	103	82	129	222	215	224	170	118
Pr. Prod. (mg $C/m^3/h$)d	0.52	0.43	0.64	0.69	0.75	0.36	0.26	0.12	0.00	
Pr. Prod. (mg $C/m^3/h$)e	0.08	0.14	0.25	0.28	0.00	0.11	0.03	0.00	0.00	

a >0.8 µm b 0.8-2.0 µm c >2.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>2.0 µm)

Table 77. Physical, chemical and biological data from Sproat Lake, Stn. 2, September 18, 1986.

Depth (m)	1	5	10	12	16	20	23	26	30	40
Temperature (^{o}C)	19.0	19.0	18.8	13.6	9.1	7.4	7.0	6.7	6.4	5.4
pH	7.5			7.5			7.3			
T. ALk. (mg/L $CaCO_3$)	26.94			27.08			29.47			
DIC (mg/L)	6.92			7.02			8.30			
TDN (µg N/L)	213	120	184	153	131	161	134	172	140	173
Ammonia (µg N/L)	<4	<4	<4	5	<4	5	5	8	14	9
Nitrate (µg N/L)	<1	<1	<1	<1	<1	9	11	10	16	32
PN (µg N/L)	19	21	21	22	21	19	19	15	14	10
PC (µg C/L)	361	369	375	358	387	318	356	314	286	226
TP (µg P/L)	1.0	1.0	<1.0	2.0	2.0	<1.0	<1.0	2.0	1.0	1.0
PP (µg P/L)	0.6	0.7	0.6	1.2	1.0	1.0	0.9	0.8	0.8	0.8
Bacteria ($X10^6$/mL)	0.65	0.49	0.60	0.48	0.84	0.45	0.44	0.36	0.48	0.21
Chlorophyll (µg/L)a	0.47	0.51	0.75	1.10	1.40	1.83	2.05	1.88	1.25	0.90
Chlorophyll (µg/L)b	0.22		0.26	0.51		0.69		0.43		
Chlorophyll (µg/L)c	0.25		<0.25	0.65		1.05		1.15		
Alg. Volume (mm^3/m^3)	1031	854	704	2276	2638	3073	4236	3586	3149	1516
Alg. Carbon (mg C/m^3)	93	86	73	182	206	229	297	252	218	104
Pr. Prod. (mg $C/m^3/h$)d	0.84	1.00	0.62	0.75	0.68	0.46	0.13	0.11	0.04	
Pr. Prod. (mg $C/m^3/h$)e	0.36	0.55	0.46	1.06	0.43	0.26	0.12	0.20	0.02	

a >0.8 µm b 0.8-2.0 µm c >2.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>3.0 µm)

Table 78. Physical, chemical and biological data from Sproat Lake, Stn. 2, October 22, 1986.

Depth (m)	0	3	5	10	12	18	21	26	30	40
Temperature (^{o}C)	15.3	15.3	15.2	15.2	14.6	8.2	7.3	6.6	6.3	5.4
TDS (mg/L)			41.2							
pH		7.5				7.2				
T. ALk. (mg/L $CaCO_3$)		36.59				37.58				
DIC (mg/L)		9.41				10.55				
TDN (µg N/L)	170	137	118	149	136	140	113	186	145	148
Ammonia (µg N/L)	7	<4	<4	<4	<4	<4	9	8	6	7
Nitrate (µg N/L)	4	2	2	3	5	2	3	18	23	36
PN (µg N/L)	20	21	22	10	96	94	94	82	75	68
PC (µg C/L)	225	231	244	244	260	228	197	194	161	119
TP (µg P/L)	2.0	2.0	2.0	2.0	3.0	1.0	3.0	1.0	2.0	4.0
PP (µg P/L)	0.8	1.4	1.3	1.0	1.0	1.2	0.8	1.0	1.2	0.8
Bacteria ($X10^6$/mL)	0.51	0.76	0.54	0.40	0.35	0.28	0.43	0.26	0.28	0.32
Chlorophyll (µg/L)a	0.64	0.64	0.68	0.80	1.33	2.45	2.67	1.88	1.44	0.81
Chlorophyll (µg/L)b		0.36		0.38	0.66		0.90		0.19	
Chlorophyll (µg/L)c		0.28		0.25	0.65		1.45			
Alg. Volume (mm^3/m^3)	1218	738	1146	818	910	3773	4136	3230	2113	1094
Alg. Carbon (mg C/m^3)	104	81	109	82	85	269	296	235	151	76

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 79. Physical, chemical and biological data from Sproat Lake, Stn. 2, November 18, 1986.

Depth (m)	0	3	5	10	15	17	20	27	30	40
Temperature (^{o}C)	10.9	11.0	11.0	11.0	9.3	8.3	7.3	6.4	6.1	5.1
TDS (mg/L)			46.1							
pH			7.4							
T. Alk. (mg/L $CaCO_3$)			26.52							
DIC (mg/L)			7.07							
TDN (µg N/L)	243	240	264	166	195	174	209	184	218	259
Ammonia (µg N/L)	8	7	7	7	5	10	11	14	5	14
Nitrate (µg N/L)	5	3	5	4	5	4	6	13	33	41
PN (µg N/L)	28	29	16	27	20	23	19	15	17	
PC (µg C/L)	218	223	107	249	216	211	179	174	182	
TP (µg P/L)	2.0	1.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	3.0
PP (µg P/L)	2.2	1.6	2.6	2.0	1.8	1.7	2.2	1.9	1.0	1.4
Bacteria (X10^{6}/mL)		0.48		0.37	0.43	0.32		0.33		
Chlorophyll (µg/L)a	1.17	1.28	1.20	1.23	1.30	1.45	1.27	1.12	0.86	0.59
Chlorophyll (µg/L)b		0.49		0.54	0.49	0.51		<0.12		
Chlorophyll (µg/L)c		0.46		0.39	0.39	0.63		0.74		
Alg. Volume (mm^3/m^3)		1624		1008	1172	1794		3170		
Alg. Carbon (mg C/m^3)		156		110	103	145		219		

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

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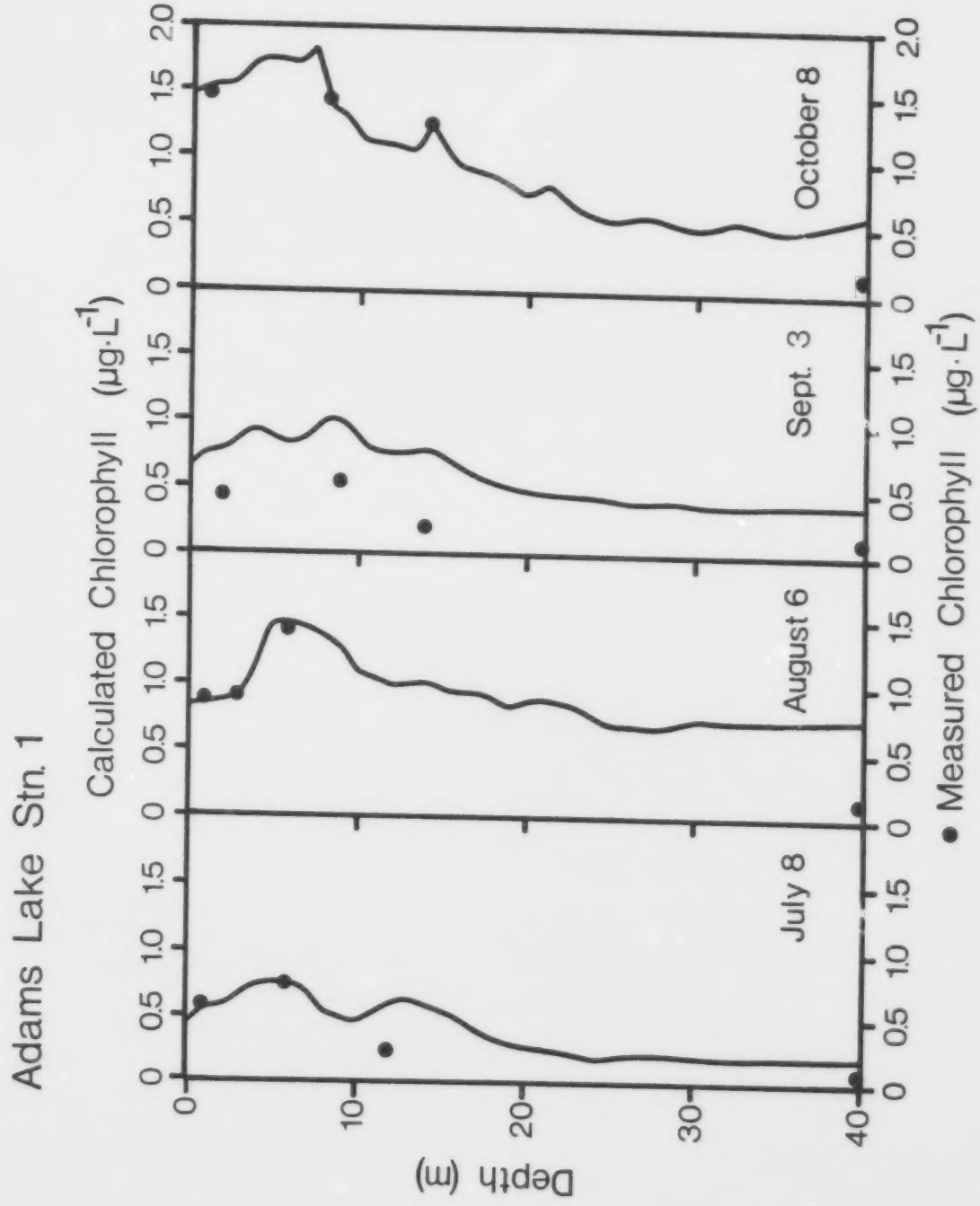


Fig. 1.1. Seasonal variation of *in vivo* fluorescence at Adams Lake, Stn. 1 during 1986. *In vivo* fluorescence data were normalized to chlorophyll.

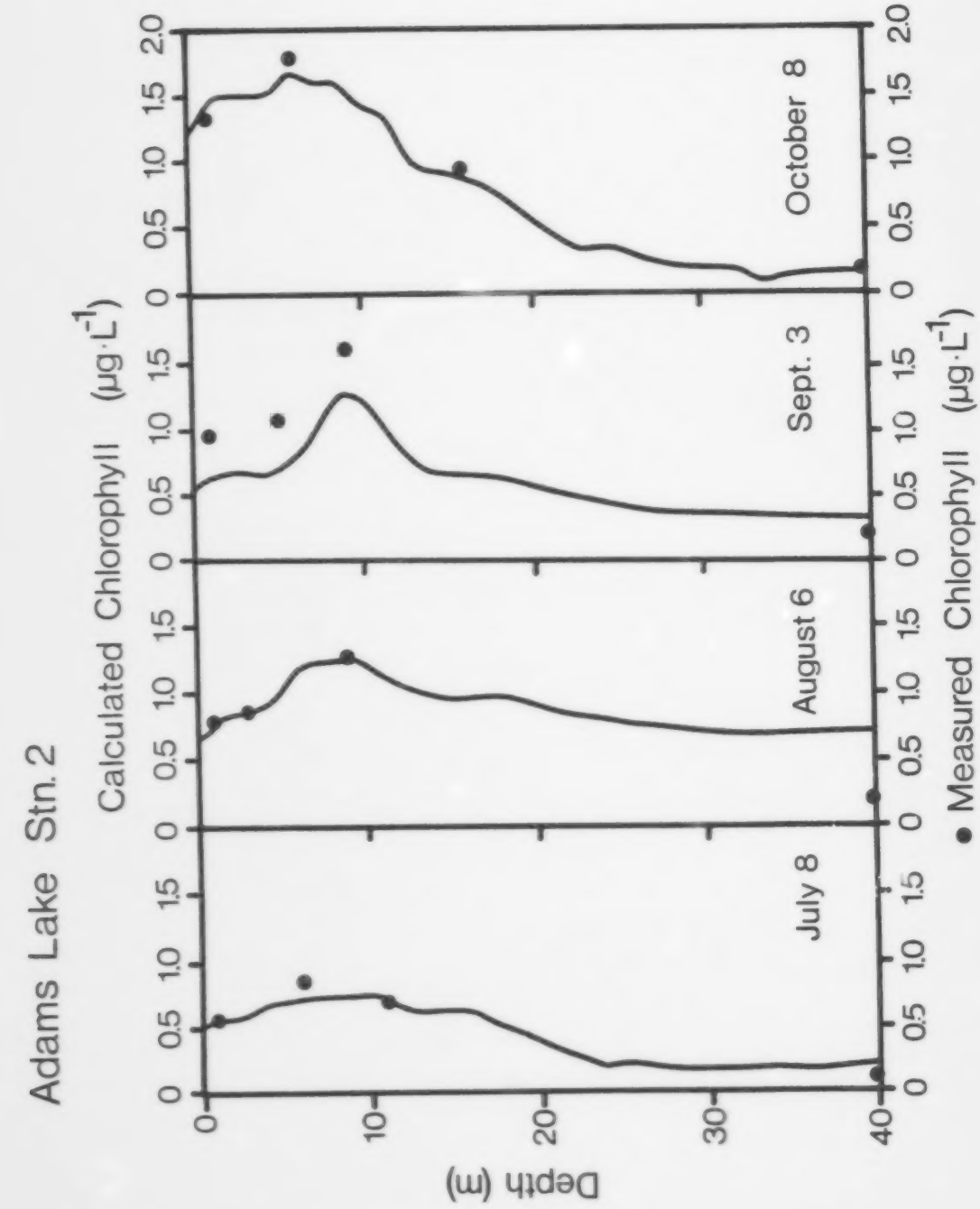


Fig. 1.2. Seasonal variation of in vivo fluorescence at Adams Lake, Stn. 2 during 1986. In vivo fluorescence data were normalized to chlorophyll.

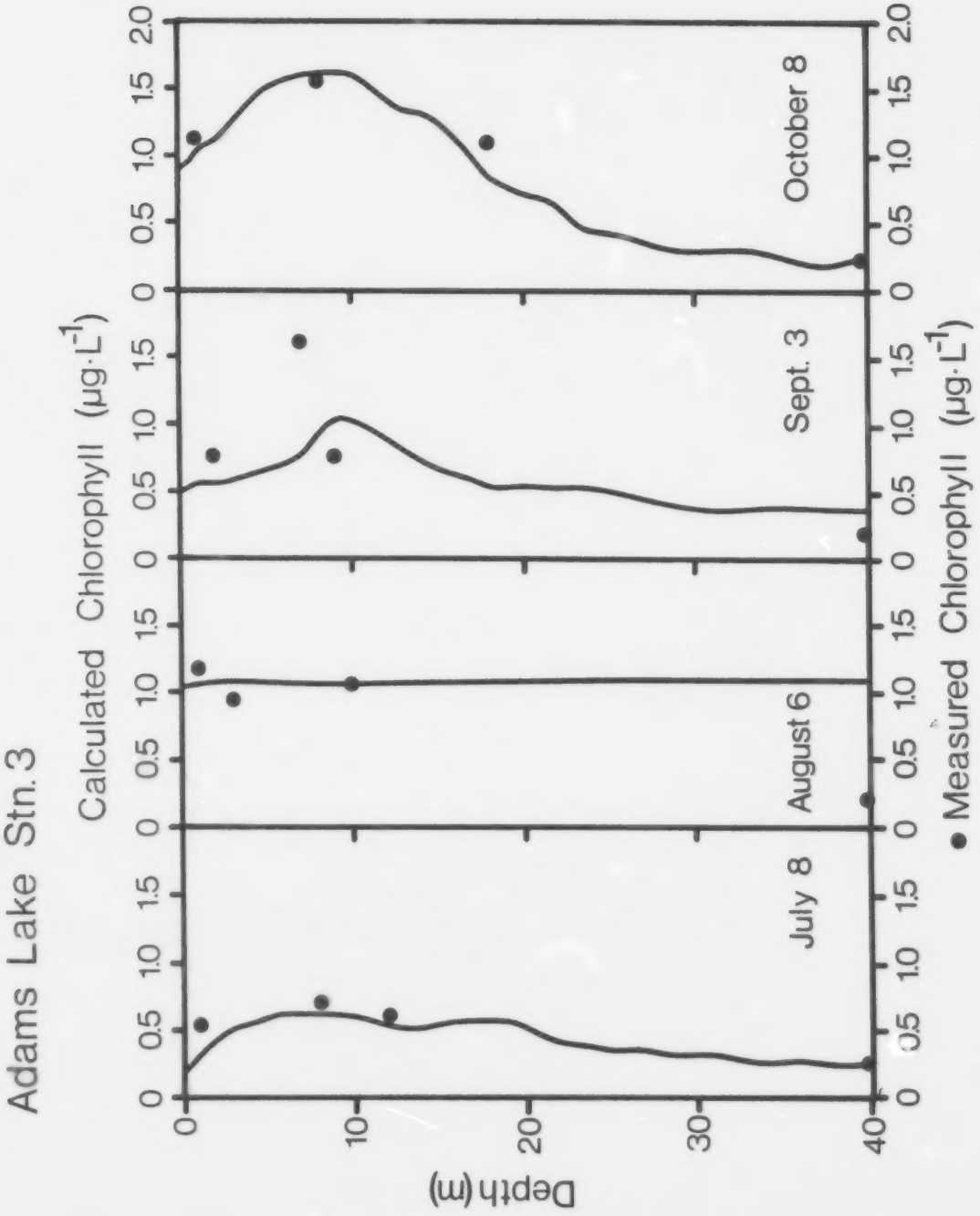


Fig. 1.3. Seasonal variation of in vivo fluorescence at Adams Lake, Stn. 3 during 1986. In vivo fluorescence data were normalized to chlorophyll.

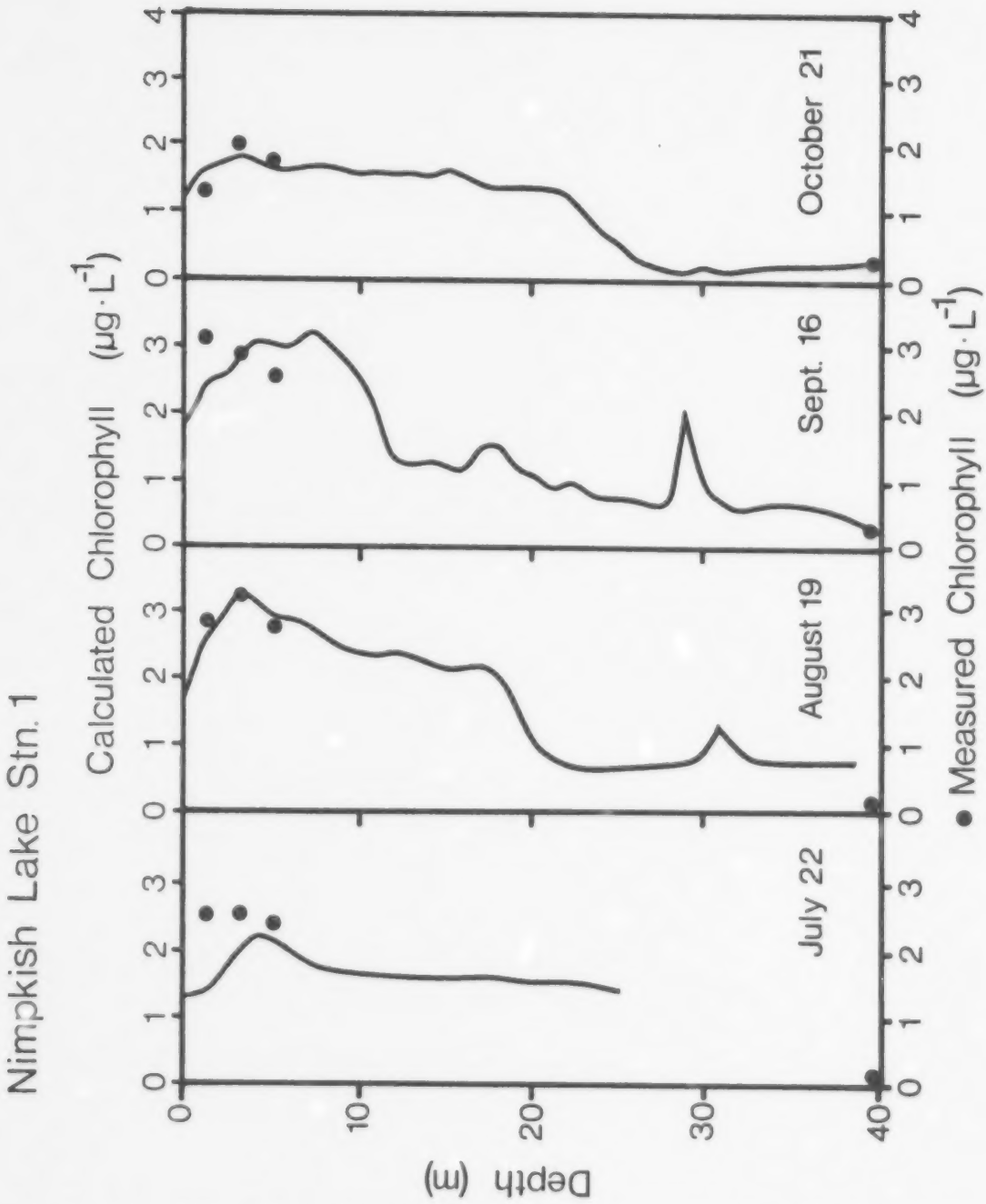


Fig. 1.4. Seasonal variation of in vivo fluorescence at Nimpkish Lake, Stn. 1 during 1986. In vivo fluorescence data were normalized to chlorophyll.

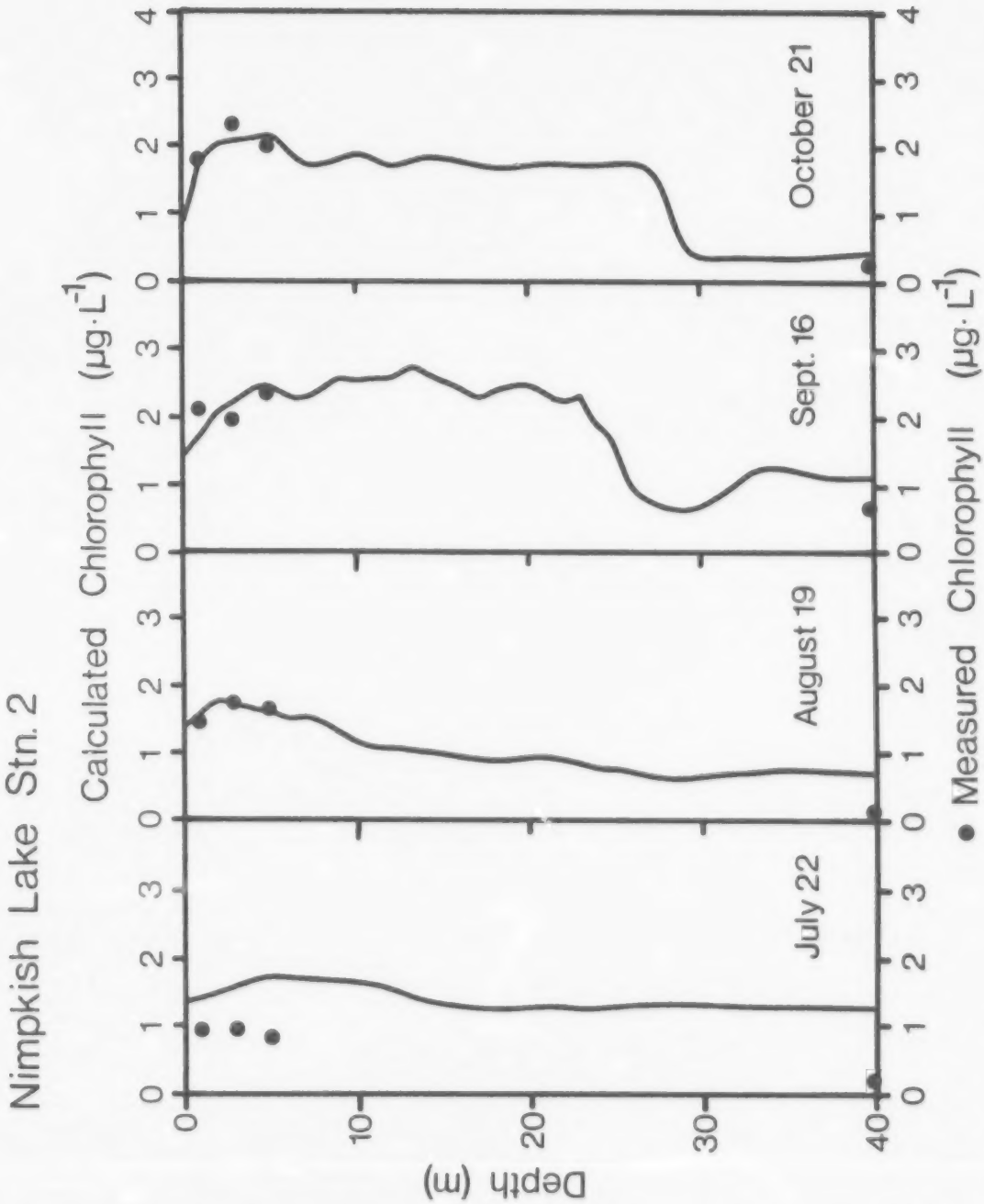


Fig. 1.5. Seasonal variation of in vivo fluorescence at Nimpkish Lake, Stn. 2 during 1986. In vivo fluorescence data were normalized to chlorophyll.

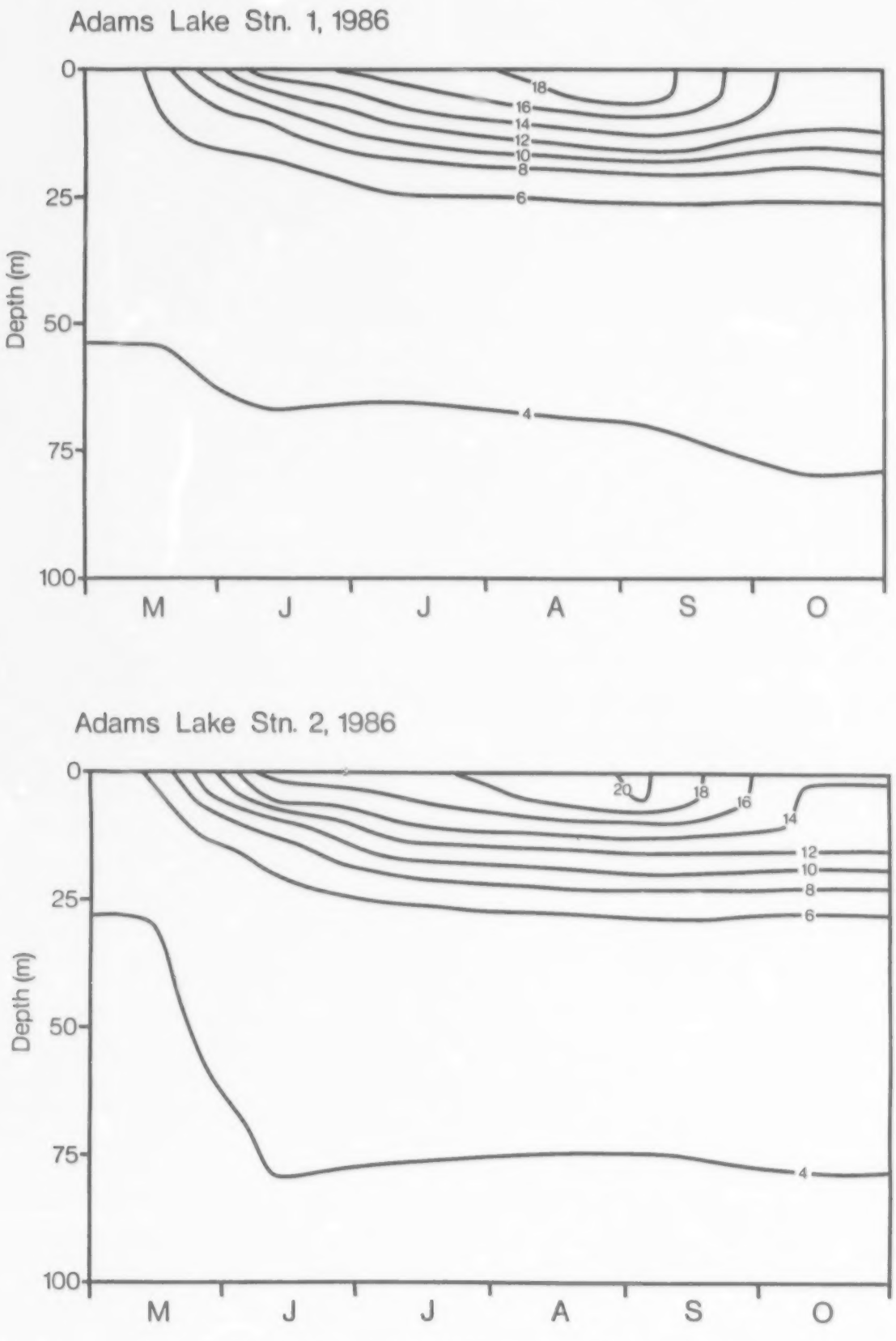


Fig. 1.6. Adams Lake stations 1 and 2 isotherms.

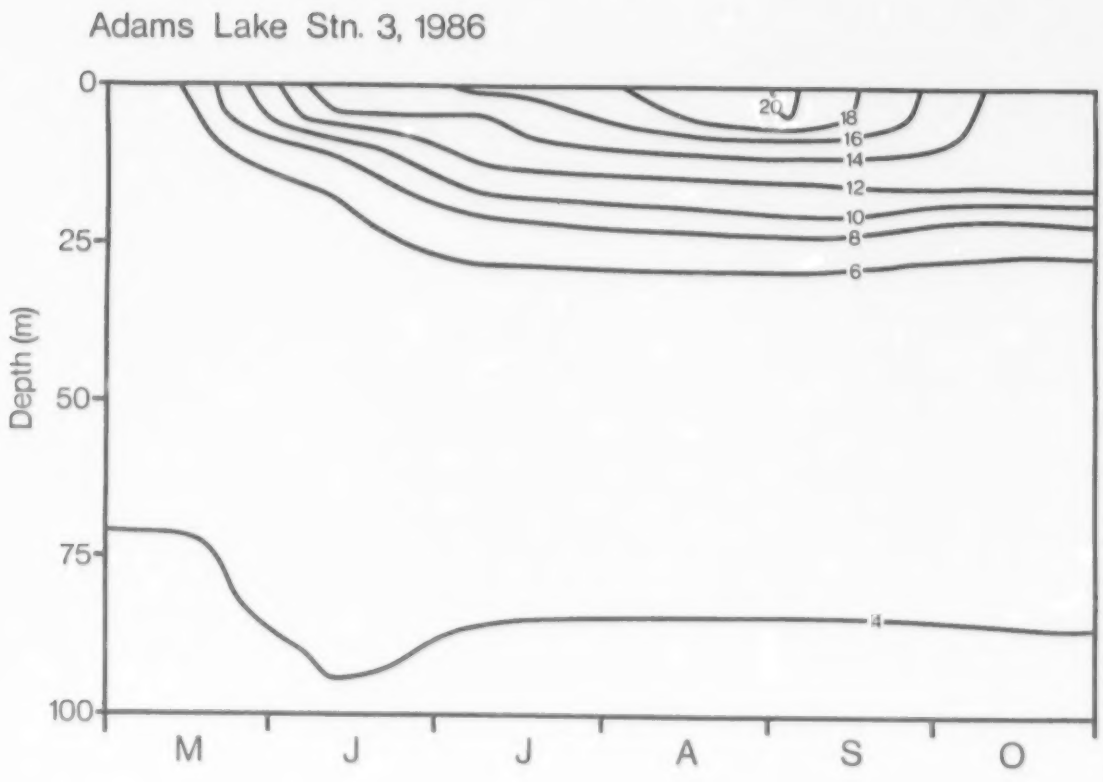
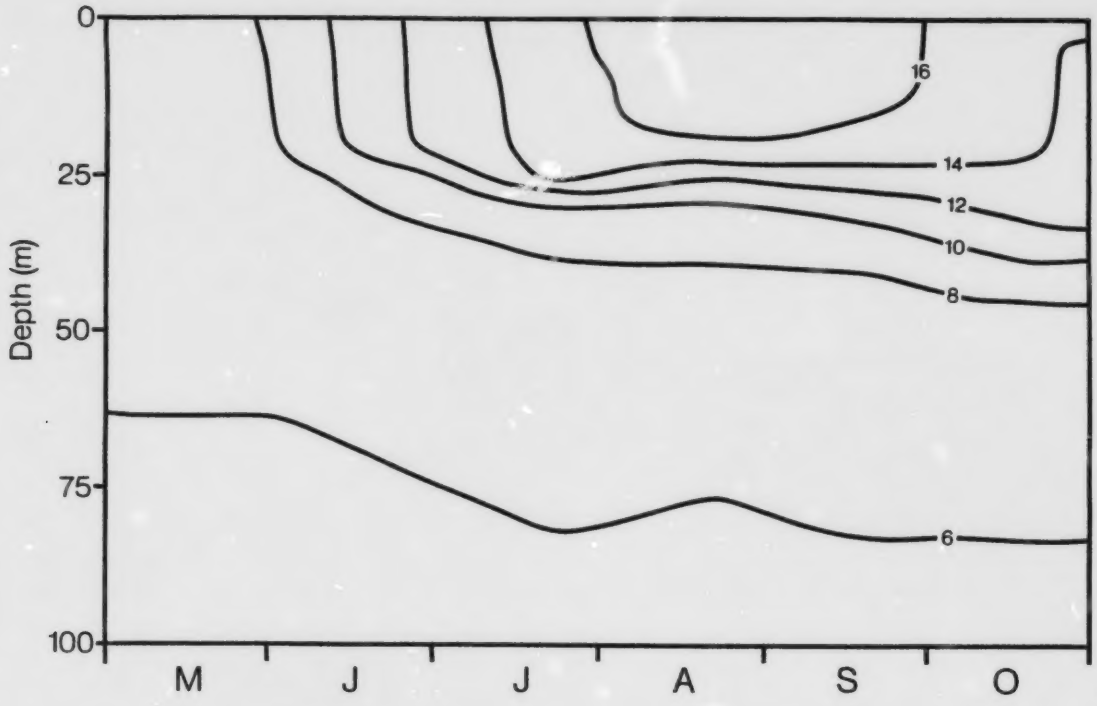


Fig. 1.7. Adams Lake station 3 isotherms.

Nimpkish Lake Stn. 1, 1986



Nimpkish Lake Stn. 2, 1986

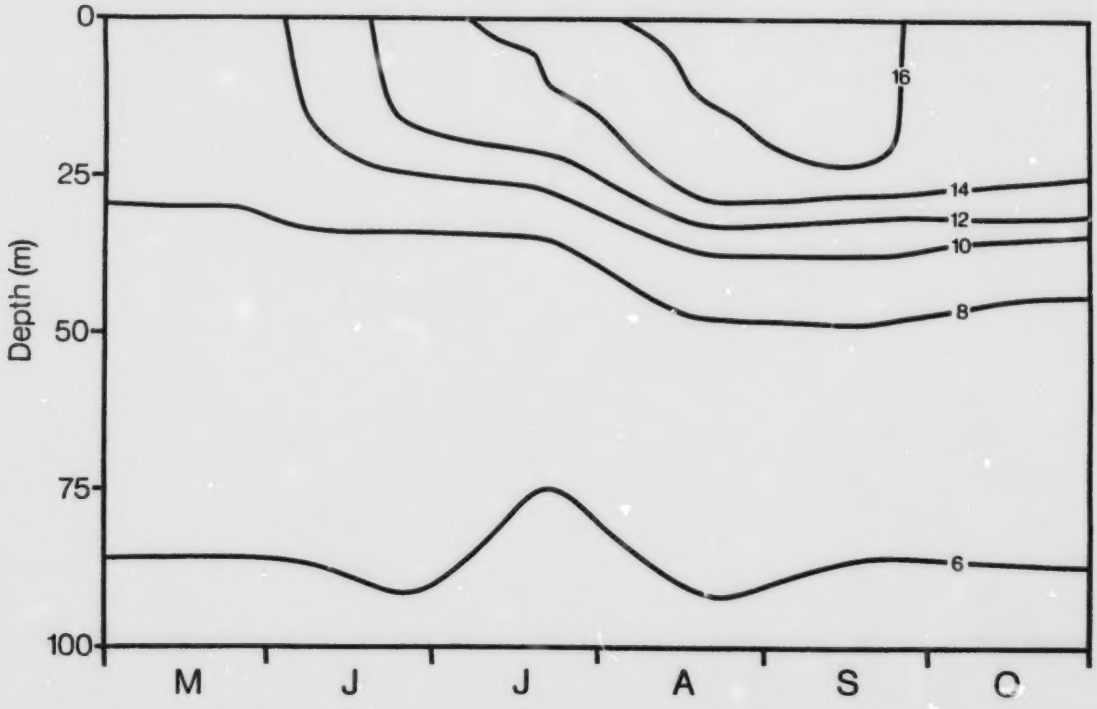


Fig. 1.8. Nimpkish Lake stations 1 and 2 isotherms.

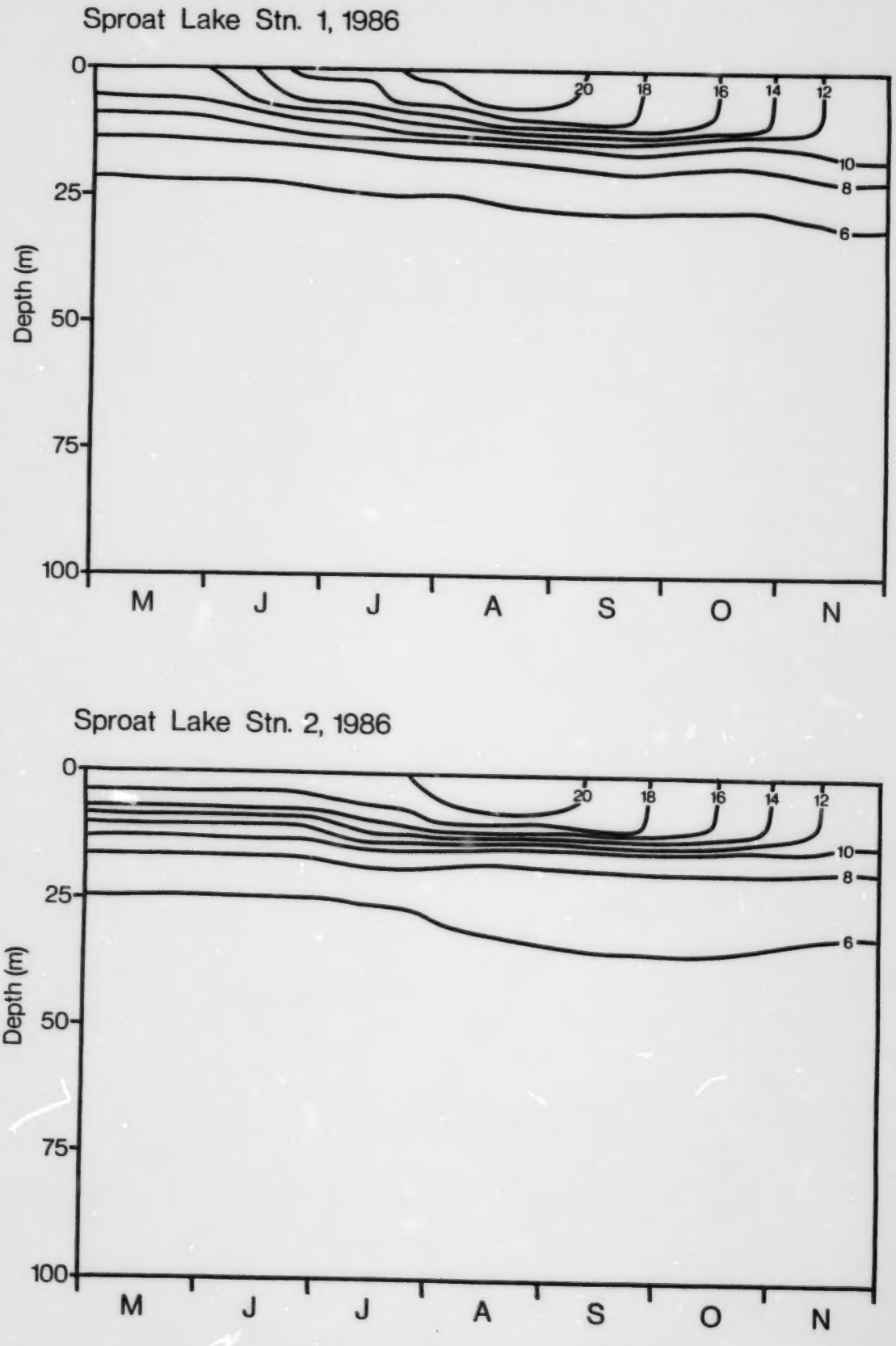


Fig. 1.9. Sproat Lake stations 1 and 2 isotherms.

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Table 1. 1986 sampling dates for Chilko Lake.

Station	7	10	10A	10B	10C	10D	11
May							29
Jun	5	6	6	6	6	6	13
Jun	19						
Jul	14	4	4	4	4	4	3
Jul							17
Aug	22						1
Aug							21
Sep	5						4
Sep	16						11
Oct	9						1

Table 2. Variation in surface temperature (^{o}C) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							3.9
Jun	3.8	4.7	5.9	5.3	4.0	5.6	6.9
Jun	4.0						
Jul	10.7	7.4	[illegible].5	8.0	7.6	7.6	7.6
Jul							8.2
Aug	14.3						11.9
Aug							13.7
Sep	12.6						14.4
Sep	10.6						11.7
Oct	8.4						8.3
$\bar{X}$	10.0	6.0	6.7	6.6	5.8	6.6	9.8

Table 3. Variation in mean epilimnetic temperature (^{o}C) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							3.5
Jun	3.6	4.2	4.4	4.4	3.8	4.3	6.5
Jun	3.9						
Jul	6.6	5.5	6.0	5.8	5.4	5.4	7.2
Jul							7.8
Aug	12.5						9.4
Aug							1
Sep	12.5						13.2
Sep	10.4						11.2
Oct	8.1						8.3
$\bar{X}$	8.4	4.8	5.2	5.1	4.6	4.8	9.1

Table 4. Variation in depth of maximum stability (m) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							U
Jun	U	U	U	U	U	U	7.3
Jun	U						
Jul	U	U	U	U	U	U	8.2
Jul							5.8
Aug	13.1						31.4
Aug							9.9
Sep	19.7						22.8
Sep	20.8						26.9
Oct	U						U
$\bar{X}$	18.2	U	U	U	U	U	14.9

*weak

Table 5. Variation in Secchi depth (m) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							8.5
Jun	5.1	7.8	8.0	7.5	5.9	4.9	9.0
Jun	3.5						
Jul	5.6	5.5	6.1	5.0	4.4	4.1	6.8
Jul							6.3
Aug	4.2						4.5
Aug							5.3
Sep	3.8						7.1
Sep							4.4
Oct	6.2						6.0
$\bar{X}$	4.7	6.6	7.0	6.2	5.2	4.5	6.3

Table 6. Variation in compensation depth (m) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							27.7
Jun	22.9	29.8	27.9	28.2	25.8	21.5	24.6
Jun	20.1						
Jul	19.8	21.0	18.0	16.1	19.9	15.3	21.5
Jul							24.5
Aug	13.4						15.3
Aug							17.2
Sep	13.1						21.1
Sep	12.7						14.9
Oct	17.9						19.9
$\bar{X}$	16.9	25.4	23.0	22.2	22.8	18.4	20.3

Table 7. Variation in mean extinction coefficient (k_e) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							0.15
Jun	0.19	0.15	0.15	0.15	0.17	0.20	0.17
Jun	0.21						
Jul	0.22	0.19	0.24	0.27	0.21	0.28	0.19
Jul							0.18
Aug	0.33						0.28
Aug							0.23
Sep	0.30						0.19
Sep	0.32						0.27
Oct	0.23						0.21
$\bar{X}$	0.26	0.17	0.20	0.21	0.19	0.24	0.21

Table 8. Variation in mean epilimnetic pH, total alkalinity (mg/L $CaCO_3$) and dissolved inorganic carbon (mg/L) during 1986.

	pH		Alkalinity		DIC	
Station	7	11	7	11	7	11
May		6.8		20.44		7.56
Jun	6.6	6.8	20.18	21.34	9.28	7.30
Jun	6.6		21.00		8.86	
Jul	6.9	7.2	22.36	21.06	9.32	6.78
Jul		7.0		20.32		6.29
Aug	7.5	7.0	19.99	20.44	5.19	6.19
Aug		7.6		20.80		5.34
Sep	7.1	6.8	20.74	20.92	6.02	6.93
Sep	7.6	7.3	20.06	20.06	6.17	5.43
Oct	6.9	7.3	19.89	20.07	6.37	5.61
$\bar{X}$	7.1	7.1	20.83	20.65	7.37	6.33

Table 9. Variation in mean epilimnetic total dissolved nitrogen (µg N/L) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							133
Jun	178	171	140	183	178	202	145
Jun	200						
Jul	133	159	134	135	148	152	134
Jul							199
Aug	104						142
Aug							128
Sep	182						163
Sep	142						166
Oct	170						186
$\bar{X}$	150	165	137	159	163	177	153

Table 10. Variation in mean epilimnetic nitrate (µg N/L) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							18
Jun	22	20	22	22	23	21	19
Jun	23						
Jul	15	19	18	20	21	21	18
Jul							16
Aug	2						12
Aug							<1
Sep	5						4
Sep	4						6
Oct	12						11
$\bar{X}$	11	20	20	21	22	21	12

Table 11. Variation in mean epilimnetic ammonia (µg N/L) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							<4
Jun	7	5	<4	<4	<4	<4	4
Jun	8						
Jul	5	6	6	6	7	10	<4
Jul							<4
Aug	<4						7
Aug							5
Sep	8						3
Sep	6						7
Oct	8						4
$\bar{X}$	6	6	5	5	6	7	5

Table 12. Variation in mean epilimnetic total phosphorus (µg P/L) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							1.6
Jun	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	3.0
Jun	2.6						
Jul	3.4	3.3	3.0	3.0	2.0	2.3	4.0
Jul							1.7
Aug	2.2						2.3
Aug							1.2
Sep	4.2						3.3
Sep	3.3						4.0
Oct	2.3						
$\bar{X}$	2.8	2.3	2.0	2.0	1.5	1.6	2.5

Table 13. Variation in mean epilimnetic particulate phosphorus (µg P/L) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							1.3
Jun	0.6	0.3	2.7	0.3	0.4	0.5	1.2
Jun	2.4						
Jul	1.8	1.3	1.3	1.6	1.4	1.8	2.0
Jul							1.2
Aug	2.5						1.6
Aug							1.4
Sep	1.7						1.1
Sep	1.6						1.2
Oct	1.2						1.4
$\bar{X}$	1.9	0.8	2.0	1.0	0.9	1.2	1.4

Table 14. Variation in mean epilimnetic particulate carbon (µg C/L) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							121
Jun	109	124	144	150	153	139	159
Jun	165						
Jul	113				100	84	139
Jul							137
Aug	217						143
Aug							201
Sep	204						117
Sep	200						153
Oct	119						106
$\bar{X}$	164	124	144	150	126	112	146

Table 15. Variation in mean epilimnetic particulate nitrogen (µg N/L) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							10
Jun	14	14	15	16	14	14	15
Jun	12						
Jul	18				14	14	21
Jul							15
Aug	29						18
Aug							20
Sep	16						14
Sep	21						18
Oct	16						17
$\bar{X}$	19	14	15	16	14	14	17

Table 16. Variation in mean epilimnetic total chlorophyll (µg/L) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							0.34
Jun	0.33	0.35	0.26	0.32	0.36	0.34	0.23
Jun	0.35						
Jul	0.38	0.32	0.30	0.32	0.32	0.32	0.29
Jul							0.40
Aug	0.69						0.61
Aug							0.78
Sep	0.68						0.68
Oct	0.79						0.79
$\bar{X}$	0.54	0.34	0.28	0.32	0.34	0.33	0.53

Table 17. Variation in mean epilimnetic TDS (mg/L) during 1986.

Station	7	11
Jun	30.0	34.5
Jul	32.3	26.8
Jul		24.0
Aug	28.9	26.7
Sep	32.6	27.3
Sep		33.9
Oct	30.0	19.7
$\bar{X}$	30.9	27.1

Table 18. Variation in primary production (mg C/m^3/h) during 1986.

	>0.2 µm		0.2-3.0 µm		>3.0 µm	
Station	7	11	7	11	7	11
May		0.24		0.14		0.10
Jun	0.45	1.18	0.19	0.72	0.26	0.46
Jun	1.05		0.66		0.39	
Jul	0.32	0.45	*0.28	*0.24	*0.04	*0.21
Jul		0.23		*0.09		*0.14
Aug	0.48	0.69	*0.09	0.43	*0.39	0.26
Aug		0.22		*0.04		*0.18
Sep	1.08	0.55	*0.62	*0.33	*0.46	*0.22
Sep	1.07	1.18	*0.71	*0.74	*0.36	*0.44
Oct	0.75	0.61	*0.41	*0.37	*0.34	*0.24
$\bar{X}$	0.69	0.62	0.40	0.36	0.29	0.26

* 2.0 µm

Table 19. Variation in integrated hourly primary production (mg C/m^2/h), daily primary production (mg C/m^2/d) and primary production per unit of light (mg C/Einstein) during 1986.

	mg C/m^2/h		mg C/m^2/d		mg C/Einstein	
Station	7	11	7	11	7	11
May		6.78		64.13		1.28
Jun	10.37	29.12	66.68	276.66	5.24	5.63
Jun	21.05		184.31		4.93	
Jul	6.31	9.78	50.20	89.72	2.09	2.28
Jul		5.68		33.95		1.86
Aug	6.44	10.56	43.35	103.05	1.24	2.38
Aug		3.76		31.88		0.86
Sep	14.21	11.59	110.52	274.74	3.76	17.04
Sep	13.54	17.55	69.23	162.52	8.11	8.95
Oct	13.37	12.15	89.18	90.91	5.03	9.88
$\bar{X}$	11.29	12.33	82.87	125.25	3.80	5.03

Table 20. Variation in mean epilimnetic algal volume (mm^3/m^3) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							828
Jun	796	660	888	880	682	562	1933
Jun	2127						
Jul	1850	1713	1556	1838	1496	1669	1732
Jul							1747
Aug	1637						1409
Aug							1482
Sep	2015						904
Sep	1648						1826
Oct	1684						1592
$\bar{X}$	1763	1186	1222	1359	1089	1116	1562

Table 21. Variation in mean epilimnetic algal carbon (mg C/m^3) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							72
Jun	74	63	83	81	64	57	154
Jun	167						
Jul	142	125	124	136	114	128	135
Jul							138
Aug	133						118
Aug							123
Sep	165						81
Sep	137						154
Oct	134						134
$\bar{X}$	141	94	104	108	89	92	128

Table 22. Variation in zooplankton biomass (mg dry weight/m^3) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							4.0
Jun	6.4	8.2	6.7	6.5	6.1	5.8	9.6
Jun	2.8						
Jul	13.5	11.9	20.6	15.4	14.7	14.5	29.4
Jul							10.8
Aug	21.8						23.7
Aug							12.6
Sep	15.0						18.4
Sep	15.8						22.4
Oct	16.7						22.7
$\bar{X}$	13.9	10.0	13.6	11.0	10.4	10.2	17.8

Table 23. Variation in zooplankton ash-free dry weight (mg/m^3) during 1986.

Station	7	10	10A	10B	10C	10D	11
May							2.4
Jun	4.9	6.3	4.9	5.3	5.2	4.4	8.1
Jun	1.8						
Jul	11.3	10.0	17.5	13.1	12.1	11.9	25.5
Jul							9.8
Aug	19.1						21.2
Aug							8.3
Sep	11.8						16.4
Sep	13.7						20.2
Oct	14.1						18.7
$\bar{X}$	11.7	8.2	11.2	9.2	8.6	8.2	15.1

Table 24. Physical, chemical and biological data from Chilko Lake, Stn. 7, June 5, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	3.8	3.8	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.6
pH				6.6		6.6				
T. Alk. (mg/L $CaCO_3$)				19.94		20.43				
DIC (mg/L)				9.28		9.27				
TDN (µg N/L)		211		157		184		166		174
Ammonia (µg N/L)		<4		4		5		5		19
Nitrate (µg N/L)		22		22		22		22		22
PN (µg N/L)		12		19		13		12		14
PC (µg C/L)		102		124		113		94		111
TP (µg P/L)		<1.0		<1.0		<1.0		<1.0		<1.0
PP (µg P/L)		0.5		0.6		0.5		0.6		0.7
Chlorophyll (µg/L)a		0 26		0.34		0.38		0.33		0.36
Chlorophyll (µg/L)b		0.15		0.16		0.16		0.16		0.18
Chlorophyll (µg/L)c		<0.11		<0.11		<0.11		<0.11		<0.11
Alg. Volume (mm^3/m^3)		344		1006		690		1085		857
Alg. Carbon (mg C/m^3)		42		89		61		101		77
Pr. Prod. (mg $C/m^3/h$)d	0.16	0.14	0.28	0.47	0.36	0.51	0.70	0.46	0.41	
Pr. Prod. (mg $C/m^3/h$)e	0.05	0.13	0.18	0.28	0.23	0.20	0.27	0.29	0.14	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>3.0 µm)

Table 25. Physical, chemical and biological data from Chilko Lake, Stn. 7, June 19, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
TDS (mg/L)				30.0						
pH		6.6		6.7						
T. Alk. (mg/L $CaCO_3$)		20.33		21.58						
DIC (mg/L)		8.95		8.78						
TDN (µg N/L)		261		147		279		147		166
Ammonia (µg N/L)		10		5		10		6		11
Nitrate (µg N/L)		23		23		23		24		23
PN (µg N/L)		10		11		13		13		24
PC (µg C/L)		140		168		165		186		388
TP (µg P/L)		3.0		3.0		3.0		3.0		1.0
PP (µg P/L)		2.3		2.3		3.0		2.3		2.0
Chlorophyll (µg/L)a		0.33		0.36		0.36		0.33		0.38
Chlorophyll (µg/L)b		0.11		0.11		0.13		0.15		0.13
Chlorophyll (µg/L)c		0.11		0.08		0.10		0.10		0.08
Alg. Volume (mm^3/m^3)		1971		2753		2315		1469		1698
Alg. Carbon (mg C/m^3)		152		201		182		134		140
Pr. Prod. (mg $C/m^3/h$)d	1.57	1.65	2.12	1.11	1.92	0.84	0.00	0.00	0.00	
Pr. Prod. (mg $C/m^3/h$)e	0.00	0.00	0.08	1.30	0.97		0.09	0.00	0.00	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>3.0 µm)

Table 26. Physical, chemical and biological data from Chilko Lake, Stn. 7, July 14, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	8.4	7.0	6.9	6.9	6.9	6.7	6.7	6.4	6.1	5.3
TDS (mg/L)				32.3						
pH		6.9		6.9						
T. Alk. (mg/L $CaCO_3$)		21.24		23.48						
DIC (mg/L)		10.70		7.95						
TDN (µg N/L)		144		114		132		137		138
Ammonia (µg N/L)		<4		6		<4		4		5
Nitrate (µg N/L)		13		16		14		16		18
PN (µg N/L)		16		21		21		15		16
PC (µg C/L)		109		128		136		93		97
TP (µg P/L)		4.0		4.0		3.0		3.0		3.0
PP (µg P/L)		1.3		1.7		2.2		2.0		1.6
Chlorophyll (µg/L)a		0.34		0.41		0.41		0.41		0.31
Chlorophyll (µg/L)b		0.22		0.24		0.26		0.29		0.12
Chlorophyll (µg/L)c		<0.12		<0.12		<0.12		0.12		0.14
Alg. Volume (mm^3/m^3)		1737		1355		3069		1240		1332
Alg. Carbon (mg C/m^3)		141		114		215		99		105
Pr. Prod. (mg $C/m^3/h$)d	0.00	0.09	0.26	0.18	0.41			0.25	0.26	
Pr. Prod. (mg $C/m^3/h$)e	0.00	0.03	0.07	0.00	0.00	0.07	0.05	0.00	0.05	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>2.0 µm)

Table 27. Physical, chemical and biological data from Chilko Lake, Stn. 7, August 22, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	13.5	13.0	12.7	12.5	11.9	11.6	10.5	9.7	9.4	5.4
TDS (mg/L)			28.9							
pH		7.5		7.6		7.6				
T. Alk. (mg/L $CaCO_3$)		19.89		20.39		19.69				
DIC (mg/L)		5.21		5.26		5.09				
TDN (µg N/L)	109	117	120	92	73	112	116	92	108	131
Ammonia (µg N/L)	<4	<4	<4	<4	<4	4	<4	<4	<4	5
Nitrate (µg N/L)	<1	<1	1	1	2	4	4	6	7	22
PN (µg N/L)	26	34	30	28	28	27	22	21	19	14
PC (µg C/L)	184	245	221	213	238	203	172	160	212	151
TP (µg P/L)	<1.0	1.0	3.0	4.0	2.0	2.0	2.0	3.0	2.0	<1.0
PP (µg P/L)	1.4	1.6	3.2	2.8	3.1	3.1	3.2	3.1	3.3	1.4
Chlorophyll ($\mu g/L$)	0.40	0.58	0.75	0.75	0.88	0.78	0.62	0.46	0.48	0.21
Alg. Volume (mm^3/m^3)	1753	2230	1790	1634	1932	1235	1086	1908	1162	703
Alg. Carbon ($mg C/m^3$)	145	174	153	136	155	103	95	143	94	55
Pr. Prod. ($mg C/m^3/h$)a	0.10	0.24	0.56	0.28	0.67	0.31	0.20	0.04	0.04	
Pr. Prod. ($mg C/m^3/h$)b	0.24	0.16	0.54	0.46	0.35	0.30	0.11	0.03	0.00	

a Total Primary Production (>0.2 µm)
b Fractionated Primary Production (>2.0 µm)

Table 28. Physical, chemical and biological data from Chilko Lake, Stn. 7, September 5, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	12.6	12.6	12.5	12.5	12.5	12.5	12.4	12.2	9.9	5.0
TDS (mg/L)			32.6							
pH		7.0		7.1		7.3				
T. Alk. (mg/L $CaCO_3$)		20.74		20.49		20.99				
DIC (mg/L)		6.34		5.95		5.77				
TDN (µg N/L)	194	189	174	170	167	220	166	180	177	156
Ammonia (µg N/L)	5	8	5	5	6	8	16	10	7	6
Nitrate (µg N/L)	3	3	3	4	4	5	6	13	15	27
PN (µg N/L)	16	22		12	11	16	14	19	15	6
PC (µg C/L)	274	291		277	134	171	182	103	104	101
TP (µg P/L)	4.0	4.0	4.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0
PP (µg P/L)	1.5	1.3	1.5	2.0	1.8	1.9	1.9	1.4	1.2	1.5
Alg. Volume (mm^3/m^3)	3219	3264	2568	1670	1612	2696	1014	1343	747	836
Alg. Carbon (mg C/m^3)	246	252	205	161	138	210	97	109	68	64
Pr. Prod. (mg $C/m^3/h$)a	0.27	0.83	1.15	1.17	1.04	0.67	0.31	0.16	0.13	
Pr. Prod. (mg $C/m^3/h$)b	0.12	0.32	0.50	0.51	0.42	0.26	0.15	0.11	0.03	

a Total Primary Production (>0.2 µm)
b Fractionated Primary Production (>2.0 µm)

Table 29. Physical, chemical and biological data from Chilko Lake, Stn. 7, September 16, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	10.6	10.6	10.6	10.6	10.6	10.5	10.5	10.4	9.7	5.6
pH		7.0		7.0		7.1				
T. Alk. (mg/L $CaCO_3$)		19.89		20.44		19.84				
DIC (mg/L)		6.19		6.27		6.04				
TDN (µg N/L)	211	143	110	167	113	119	145	113	157	149
Ammonia (µg N/L)	5	<4	10	7	5	7	10	<4	7	7
Nitrate (µg N/L)	4	3	4	4	3	3	3	3	7	19
PN (µg N/L)	20	20	15	17	34	20	26	23	15	18
PC (µg C/L)	200	222	205	192	230	227	170	217	137	209
TP (µg P/L)	3.0	2.0	4.0	3.0	3.0	5.0	4.0	2.0	4.0	2.0
PP (µg P/L)	1.5	1.3	1.5	2.0	1.8	1.9	1.9	1.4	1.2	1.5
Chlorophyll ($\mu g/L$)	0.76	0.78	0.71	0.80	0.68	0.56	0.76	0.68	0.36	0.16
Alg. Volume (mm^3/m^3)	1486	1700	2154	1758	1458	2106	2050	1179	944	410
Alg. Carbon ($mg\ C/m^3$)	140	141	167	158	126	163	159	105	73	35
Pr. Prod. ($mg\ C/m^3/h$)a	0.34	0.89	1.16	1.13	0.84	0.46	0.63	0.07	0.01	
Pr. Prod. ($mg\ C/m^3/h$)b	0.18	0.31	0.39	0.35	0.36	0.16	0.22	0.04	0.00	

a Total Primary Production (>0.2 µm)
b Fractionated Primary Production (>2.0 µm)

Table 30. Physical, chemical and biological data from Chilko Lake, Stn. 7, October 9, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	8.3	8.2	8.2	8.2	8.2	8.2	8.1	8.0	7.9	6.1
pH		6.9		6.9		7.0				
T. Alk. (mg/L $CaCO_3$)		19.94		20.04		19.69				
DIC (mg/L)		6.61		6.42		6.09				
TDN (µg N/L)	171	140	120	172	177	141	245	180	189	218
Ammonia (µg N/L)	9	<4	5	<4	<4	13	6	9	6	18
Nitrate (µg N/L)	11	11	10	10	11	9	15	15	16	30
PN (µg N/L)	21	16	10	19	19	22	15	14	16	10
PC (µg C/L)	167	126	43	135	132	177	94	96	134	89
TP (µg P/L)	2.0	2.0	2.0	3.0	2.0	3.0	2.0	2.0	3.0	6.0
PP (µg P/L)	1.4	1.1	1.2	1.1	1.3	1.3	1.2	1.4	1.3	1.2
Chlorophyll ($\mu g/L$)	0.85	0.93	0.85	0.88	1.08	0.98	0.56	0.53	0.49	0.19
Alg. Volume (mm^3/m^3)	1411	1684	2347	1576	2138	1934	1505	1950	612	505
Alg. Carbon (mg C/m^3)	116	138	181	129	174	149	118	141	56	45
Pr. Prod. (mg $C/m^3/h$)a	0.11	0.38	0.88	0.91	0.96	0.78	0.62	0.42	0.19	
Pr. Prod. (mg $C/m^3/h$)b	0.09	0.24	0.40	0.42	0.47	0.33	0.24	0.18	0.09	

a Total Primary Production (>0.2 µm)
b Fractionated Primary Production (>3.0 µm)

Table 31. Physical, chemical and biological data from Chilko Lake, Stn. 10, June 6, 1986.

Depth (m)	1	5	10
Temperature (^{o}C)	4.6	4.3	4.1
TDS (mg/L)		42.6	
TDN (µg N/L)	150	203	160
Ammonia (µg N/L)	6	4	<4
Nitrate (µg N/L)	20	20	20
PN (µg N/L)	15	14	14
PC (µg C/L)	124	150	97
TP (µg P/L)	<1.0	2.0	1.0
PP (µg P/L)	0.3	0.3	0.4
Chlorophyll (µg/L)	0.26	0.36	0.42
Alg. Volume (mm^3/m^3)	615	697	666
Alg. Carbon (mg C/m^3)	57	70	64

Table 32. Physical, chemical and biological data from Chilko Lake, Stn. 10, July 4, 1986.

Depth (m)	1	5	10
Temperature (^{o}C)	5.8	5.6	5.6
TDS (mg/L)		29.3	
TDN (µg N/L)	165	141	172
Ammonia (µg N/L)	6	4	9
Nitrate (µg N/L)	18	19	19
PN (µg N/L)	8	15	14
PC (µg C/L)	46	100	115
TP (µg P/L)	2.0	4.0	4.0
PP (µg P/L)	1.1	1.3	1.5
Chlorophyll (µg/L)a	0.28	0.33	0.36
Chlorophyll (µg/L)b	0.14	0.19	0.19
Chlorophyll (µg/L)c	<0.12	<0.12	<0.12
Alg. Volume (mm^3/m^3)	1962	1393	1784
Alg. Carbon (mg C/m^3)	144	105	127

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 33. Physical, chemical and biological data from Chilko Lake, Stn. 10A, June 6, 1986.

Depth (m)	1	5	10
Temperature (^{o}C)	5.5	4.6	4.3
TDN (µg N/L)	125	185	110
Ammonia (µg N/L)	<4	<4	<4
Nitrate (µg N/L)	22	23	22
PN (µg N/L)	16	14	14
PC (µg C/L)	160	128	144
TP (µg P/L)	<1.0	<1.0	<1.0
PP (µg P/L)	0.3	0.3	<0.2
Chlorophyll (µg/L)	0.16	0.29	0.34
Alg. Volume (mm^3/m^3)	1066	706	891
Alg. Carbon (mg C/m^3)	94	69	85

Table 34. Physical, chemical and biological data from Chilko Lake, Stn. 10A, July 4, 1986.

Depth (m)	1	5	10
Temperature (^{o}C)	6.7	6.3	5.9
TDN (µg N/L)	140	116	147
Ammonia (µg N/L)	<4	9	<4
Nitrate (µg N/L)	17	18	20
PN (µg N/L)	15	16	14
PC (µg C/L)	102	96	87
TP (µg P/L)	2.0	4.0	3.0
PP (µg P/L)	0.7	1.6	1.5
Chlorophyll (µg/L)a	0.24	0.34	0.31
Chlorophyll (µg/L)b	0.17	0.22	0.17
Chlorophyll (µg/L)c	<0.12	<0.12	<0.12
Alg. Volume (mm^3/m^3)	1219	1658	1792
Alg. Carbon (mg C/m^3)	99	136	139

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 35. Physical, chemical and biological data from Chilko Lake, Stn. 10B, June 6, 1986.

Depth (m)	1	5	10
Temperature (°C)	4.8	4.4	4.3
TDN (µg N/L)	144	260	146
Ammonia (µg N/L)	<4	<4	<4
Nitrate (µg N/L)	22	21	22
PN (µg N/L)	16	15	18
PC (µg C/L)	170	130	150
TP (µg P/L)	<1	<1	<1
PP (µg P/L)	0.3	0.3	0.3
Chlorophyll (µg/L)	0.20	0.34	0.41
Alg. Volume (mm^3/m^3)	671	923	1046
Alg. Carbon (mg C/m^3)	64	84	95

Table 36. Physical, chemical and biological data from Chilko Lake, Stn. 10B, July 4, 1986.

Depth (m)	1	5	10
Temperature (°C)	6.6	6.0	5.8
TDN (µg N/L)	142	118	145
Ammonia (µg N/L)	9	<4	<4
Nitrate (µg N/L)	19	20	20
PN (µg N/L)	10	14	14
PC µg C/L)	76	95	107
TP (µg P/L)	3.0	3.0	3.0
PP (µg P/L)	1.2	2.0	1.5
Chlorophyll (µg/L)a	0.29	0.33	0.34
Chlorophyll (µg/L)b	0.16	0.17	0.17
Chlorophyll (µg/L)c	<0.12	0.12	0.12
Alg. Volume (mm^3/m^3)	2533	1757	1224
Alg. Carbon (mg C/m^3)	182	129	97

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 37. Physical, chemical and biological data from Chilko Lake, Stn. 10C, June 6, 1986.

Depth (m)	1	5	10
Temperature (^{o}C)	3.9	3.8	3.8
TDN (µg N/L)	167	210	157
Ammonia (µg N/L)	<4	<4	<4
Nitrate (µg N/L)	23	23	23
PN (µg N/L)	12	15	14
PC (µg C/L)	106	178	174
TP (µg P/L)	<1	<1	<1
PP (µg P/L)	0.4	0.6	0.3
Chlorophyll (µg/L)	0.38	0.36	0.34
Alg. Volume (mm^3/m^3)	724	654	669
Alg. Carbon (mg C/m^3)	69	62	62

Table 38. Physical, chemical and biological data from Chilko Lake, Stn. 10C, July 4, 1986.

Depth (m)	1	5	10
Temperature (^{o}C)	5.8	5.5	5.4
TDN (µg N/L)	192	118	135
Ammonia (µg N/L)	5	6	10
Nitrate (µg N/L)	21	21	22
PN (µg N/L)		13	15
PC (µg C/L)		94	106
TP (µg P/L)	2.0	3.0	1.0
PP (µg P/L)	1.3	1.5	1.4
Chlorophyll (µg/L)a	0.28	0.33	0.36
Chlorophyll (µg/L)b	0.14	0.17	0.17
Chlorophyll (µg/L)c	<0.12	0.12	0.12
Alg. Volume (mm^3/m^3)	1256	1339	1892
Alg. Carbon (mg C/m^3)	98	104	140

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 39. Physical, chemical and biological data from Chilko Lake, Stn. 10D, June 6, 1986.

Depth (m)	1	5	10
Temperature (^{o}C)	5.0	4.3	4.2
TDN (µg N/L)	239	212	154
Ammonia (µg N/L)	<4	<4	<4
Nitrate (µg N/L)	20	21	22
PN (µg N/L)	15	14	13
PC (µg C/L)	135	159	124
TP (µg P/L)		<1	<1
PP (µg P/L)	0.7	0.4	0.5
Chlorophyll (µg/L)	0.29	0.34	0.39
Alg. Volume (mm^3/m^3)	645	578	462
Alg. Carbon (mg C/m^3)	67	60	44

Table 40. Physical, chemical and biological data from Chilko Lake, Stn. 10D, July 4, 1986.

Depth (m)	1	5	10
Temperature (^{o}C)	5.7	5.5	5.4
TDN (µg N/L)	197	135	123
Ammonia (µg N/L)	19	<4	6
Nitrate (µg N/L)	22	21	20
PN (µg N/L)	12	16	14
PC (µg C/L)	72	92	88
TP (µg P/L)	1.0	3.0	3.0
PP (µg P/L)	1.3	2.3	1.7
Chlorophyll (µg/L)a	0.28	0.33	0.34
Chlorophyll (µg/L)b	0.14	0.16	0.16
Chlorophyll (µg/L)c	<0.12	0.14	0.16
Alg. Volume (mm^3/m^3)	1537	1796	1674
Alg. Carbon (mg C/m^3)	120	136	129

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 41. Physical, chemical and biological data from Chilko Lake, Stn. 11, May 29, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
pH				6.8		6.7				
T. Alk. (mg/L $CaCO_3$)				20.44		20.44				
DIC (mg/L)				7.20		7.91				
TDN (µg N/L)	141	132	182	119	133	111	140	124	122	130
Ammonia (µg N/L)	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Nitrate (µg N/L)	18	17	18	18	18	17	18	18	19	19
PN (µg N/L)	13	11	10	11	10	9	9	8	14	14
PC (µg C/L)	128	123	98	120	114	113	145	106	140	192
TP (µg P/L)	2.0	<1.0	1.0	2.0	1.0	2.0	1.0	3.0	1.0	2.0
PP (µg P/L)	1.5	1.2	1.4	1.3	1.4	1.1	1.4	1.2	1.6	1.2
Chlorophyll ($\mu g/L$)	0.41	0.31	0.31	0.33	0.34	0.31	0.33	0.33	0.39	0.34
Alg. Volume (mm^3/m^3)	1093	496	1004	915	682	803	883	870	780	751
Alg. Carbon ($mg C/m^3$)	95	50	81	75	61	74	75	77	72	63
Pr. Prod. ($mg C/m^3/h$)a	0.00	0.00	0.08	0.19	0.38	0.24	0.32	0.32	0.32	
Pr. Prod. ($mg C/m^3/h$)b	0.00	0.00	0.02	0.12	0.20	0.06	0.15	0.16	0.13	

a Total Primary Production (>0.2 µm)
b Fractionated Primary Production (>3.0 µm)

Table 42. Physical, chemical and biological data from Chilko Lake, Stn. 11, June 13, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	6.8	6.5	6.3	5.6	4.9	4.8	4.6	4.4	4.4	4.2
TDS (mg/L)				34.5						
pH		6.8		6.7		6.8				
T. Alk. (mg/L $CaCO_3$)		21.34		20.79		18.29				
DIC (mg/L)		7.30		8.13		7.44				
TDN (µg N/L)		145		123		156		185		194
Ammonia (µg N/L)		5		<4		4		<4		11
Nitrate (µg N/L)		19		19		21		22		22
PN (µg N/L)		15		14		14		14		15
PC (µg C/L)		159		107		115		117		147
TP (µg P/L)		3.0		2.0		3.0		2.0		3.0
PP (µg P/L)		1.2		1.3		1.5		1.7		1.6
Chlorophyll (µg/L)a		0.23		0.21		0.28		0.36		0.38
Chlorophyll (µg/L)b		0.13		0.11		0.18		0.23		0.23
Chlorophyll (µg/L)c		0.02		0.05		0.05		0.15		0.10
Alg. Volume (mm^3/m^3)		2074		1524		2490		1643		1235
Alg. Carbon (mg C/m^3)		166		121		193		138		91
Pr. Prod. (mg $C/m^3/h$)d	0.47	1.25	0.47	0.44	1.79	1.13	0.96	1.20	0.63	
Pr. Prod. (mg $C/m^3/h$)e	0.24	0.68	0.24	0.96	0.11	0.49	0.07	0.65	0.17	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>3.0 µm)

Table 43. Physical, chemical and biological data from Chilko Lake, Stn. 11, July 3, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	7.3	7.3	7.2	7.1	6.8	6.7	6.5	6.5	6.4	6.0
TDS (mg/L)				26.8						
pH		7.1		7.3						
T. Alk. (mg/L $CaCO^{3}$)		20.94		21.19						
DIC (mg/L)		7.60		5.96						
TDN (µg N/L)		163		104		108		150		148
Ammonia (µg N/L)		<4		<4		<4		4		9
Nitrate (µg N/L)		17		18		18		18		19
PN (µg N/L)		18		24		21		18		
PC (µg C/L)		136		142		143		141		
TP (µg P/L)		3.0		5.0		5.0		3.0		3.0
PP (µg P/L)		0.8		3.3		2.1				1.9
Chlorophyll (µg/L)a		0.24		0.34		0.36		0.33		0.33
Chlorophyll (µg/L)b		0.19		0.26		0.21		0.22		0.21
Chlorophyll (µg/L)c		<0.12		<0.12		<0.12		<0.12		<0.12
Alg. Volume (mm^{3}/m^{3})		1283		1600		2268		1775		2165
Alg. Carbon (mg C/m^{3})		103		128		170		141		156
Pr. Prod. (mg $C/m^{3}/h$)d	0.04	0.01	0.14	0.21	0.24			0.25	0.65	
Pr. Prod. (mg $C/m^{3}/h$)e		0.00		0.29	0.50	0.17	0.19	0.36	0.12	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>2.0 µm)

Table 44. Physical, chemical and biological data from Chilko Lake, Stn. 11, July 17, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	7.9	7.8	7.7	7.0	6.5	6.3	6.2	6.1	6.0	5.2
TDS (mg/L)				24.0						
pH		7.0		7.0		7.0				
T. Alk. (mg/L $CaCO_3$)		21.14		19.54		20.29				
DIC (mg/L)		6.38		6.11		6.37				
TDN (µg N/L)		158		255		183		186		110
Ammonia (µg N/L)		<4		<4		<4		5		<4
Nitrate (µg N/L)		14		16		18		20		20
PN (µg N/L)		15		15		15		12		10
PC (µg C/L)		137		121		127		108		131
TP (µg P/L)		2.0		<1.0		2.0		1.0		1.0
PP (µg P/L)		1.0		1.3		1.3		1.5		1.0
Chlorophyll ($\mu g/L$)		0.38		0.44		0.39		0.29		0.26
Alg. Volume (mm^3/m^3)		1777		1673		2076		1463		1216
Alg. Carbon (mg C/m^3)		144		138		158		112		88
Pr. Prod. (mg $C/m^3/h$)a	0.09	0.24	0.25	0.29	0.31	0.30	0.28	0.18	0.15	
Pr. Prod. (mg $C/m^3/h$)b	0.03	0.03	0.12	0.23	0.12	0.13	0.07	0.05	0.31	

a Total Primary Production (>0.2 µm)
b Fractionated Primary Production (>2.0 µm)

Table 45. Physical, chemical and biological data from Chilko Lake, Stn. 11, August 1, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	11.0	10.3	9.8	9.6	9.3	9.0	8.9	8.8	8.8	5.1
TDS (mg/L)			26.7							
pH		7.1		7.0		7.0				
T. Alk. (mg/L $CaCO_3$)		20.69		19.89		20.74				
DIC (mg/L)		6.23		6.03		6.31				
TDN (µg/L)	114	102	135	177	178	183	132	120	133	142
Ammonia (µg N/L)	<4	5	11	9	18	5	<4	<4	<4	5
Nitrate (µg N/L)	18	10	10	10	12	11	12	14	13	20
PN (µg N/L)	20	17	22	23	20	16	18	16	14	10
PC (µg C/L)	186	127	146	157	137	107	139	178	107	115
TP (µg P/L)	2.0	2.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0
PP (µg P/L)	1.1	1.1	2.3	2.7	1.7	1.3	1.7	1.7	1.2	1.0
Chlorophyll ($\mu g/L$)	0.38	0.43	0.53	0.75	0.98	0.86	0.58	0.48	0.53	0.24
Alg. Volume (mm^3/m^3)	1747	1420	1480	1557	1357	1263	1428	1167	1265	807
Alg. Carbon ($mg\ C/m^3$)	150	114	131	136	112	103	118	98	103	61
Pr. Prod. ($mg\ C/m^3/h$)a	0.61	0.48	0.64	0.77	0.78	0.56	0.36	0.17	0.10	
Pr. Prod. ($mg\ C/m^3/h$)b	0.01	0.11	0.19	0.38	0.30	0.22	0.14	0.03	0.05	

a Total Primary Production (>0.2 µm)
b Fractionated Primary Production (>3.0 µm)

Table 46. Physical, chemical and biological data from Chilko Lake, Stn. 11, August 21, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	13.8	13.3	13.0	11.8	10.3	8.2	7.5	6.9	6.6	4.9
TDS (mg/L)			35.3							
pH		7.5		7.7		7.6				
T. Alk. (mg/L $CaCO_3$)		21.18		20.43		19.89				
DIC (mg/L)		5.48		5.20		5.10				
TDN (µg N/L)	109	128	127	148	115	97	107	149	137	175
Ammonia (µg N/L)	<4	<4	<4	8	<4	<4	<4		<4	<4
Nitrate (µg N/L)	<1	<1	<1	1	2	8	9	11	11	18
PN (µg N/L)	15	28	16	19	17	14	13	11	8	4
PC (µg C/L)	208	208	187	200	222	164	168	164	144	106
TP (µg P/L)	<1.0	<1.0	1.0	2.0	2.0	<1.0	<1.0	<1.0	<1.0	<1.0
PP (µg P/L)	1.0	1.3	1.5	2.0	1.7	0.8	1.6	1.6	1.3	1.3
Chlorophyll ($\mu g/L$)	0.41	0.51	0.65	0.81	0.73	0.62	0.58	0.53	0.51	0.31
Alg. Volume (mm^3/m^3)	1754	1485	1871	1660	1887	1550	897	1442	792	517
Alg. Carbon (mg C/m^3)	131	126	144	139	161	133	87	116	72	45
Pr. Prod. (mg $C/m^3/h$)a	0.00	0.00	0.06	0.29	0.31	0.21	0.27	0.16	0.13	
Pr. Prod. (mg $C/m^3/h$)b	0.00	0.08	0.09	0.53	0.22	0.13	0.11	0.04	0.00	

a Total Primary Production (>0.2 µm)
b Fractionated Primary Production (>2.0 µm)

Table 47. Physical, chemical and biological data from Chilko Lake, Stn. 11, September 4, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	14.3	14.3	14.2	14.1	13.7	13.0	12.6	11.8	11.2	5.2
TDS (mg/L)			27.3							
pH		6.7		6.9		7.0				
T. Alk. (mg/L $CaCO_3$)		20.89		21.09		20.79				
DIC (mg/L)		7.60		6.78		6.41				
TDN (µg N/L)	187	162	174	167	170	202	122	140	143	153
Ammonia (µg N/L)	3	3	3	3	3					
Nitrate (µg N/L)	5	3	3	3	3	3	4	5	6	28
PN (µg N/L)	6	10	9	12	14	28	15	14	14	16
PC (µg C/L)	66	126	92	122	140	101	111	150	145	176
TP (µg P/L)	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0	5.0	4.0
PP (µg P/L)	0.9	1.0	1.0	1.1	1.0	1.2	1.3		1.0	0.5
Chlorophyll ($\mu g/L$)	0.46	0.48	0.43	0.59	0.73	1.08	0.90	0.63	0.78	0.26
Alg. Volume (mm^3/m^3)	757	710	982	1075	1306	1034	994	608	668	402
Alg. Carbon (mg C/m^3)	70	62	87	99	116	93	92	54	59	34
Pr. Prod. (mg $C/m^3/h$)a	0.66	0.61	0.33	0.41	0.84	0.83	0.50	0.36	0.20	
Pr. Prod. (mg $C/m^3/h$)b	0.21	0.25	0.24	0.24	0.32	0.27	0.19	0.14	0.07	

a Total Primary Production (>0.2 µm)
b Fractionated Primary Production (>2.0 µm)

Table 48. Physical, chemical and biological data from Chilko Lake, Stn. 11, September 11, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	11.7	11.7	11.6	11.6	11.5	11.3	11.2	11.0	10.7	7.5
TDS (mg/L)			33.9							
pH		7.3		7.3		7.2				
T. Alk. (mg/L $CaCO_3$)		20.19		19.94		20.24				
DIC (mg/L)		5.47		5.39		5.70				
TDN (µg N/L)	174	190	172	174	158	160	152	145	167	163
Ammonia (µg N/L)	<4	10	5	6	5	10	<4	<4	19	7
Nitrate (µg N/L)	4	5	5	5	5	6	6	12	9	20
PN (µg N/L)	19	16	22	20		16	17	17	15	11
PC (µg C/L)	183	137	140	233		107	138	178	107	118
TP (µg P/L)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	5.0	4.0
PP (µg P/L)	1.0	1.1	1.1	1.1	1.2	1.2	1.6	1.4	1.5	0.7
Alg. Volume (mm^3/m^3)	1846	1264	2317	1542	1358	2460	1241	2859	1553	1237
Alg. Carbon (mg C/m^3)	153	115	198	137	119	199	119	211	130	96
Pr. Prod. (mg $C/m^3/h$)a	0.21	0.81	1.21	1.38	1.09	1.02	0.62	0.36	0.20	
Pr. Prod. (mg $C/m^3/h$)b	0.06	0.31	0.43	0.56	0.41	0.60	0.19	0.09	0.00	

a Total Primary Production (>0.2 µm)
b Fractionated Primary Production (>2.0 µm)

Table 49. Physical, chemical and biological data from Chilko Lake, Stn. 11, October 1, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	50
Temperature (^{o}C)	8.5	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	6.8
TDS (mg/L)			19.7							
pH		7.3		7.2		7.3				
T. Alk. (mg/L $CaCO_3$)		19.94		19.89		20.39				
DIC (mg/L)		5.50		5.70		5.63				
TDN (µg N/L)	133	149	252	198	299	248	141	141	184	110
Ammonia (µg N/L)	5	<4	<4	<4	<4		6	<4	<4	9
Nitrate (µg N/L)	11	11	11	11	11	11	11	10	10	15
PN (µg N/L)	19	17	18	17	18	16	16	19	16	15
PC (µg C/L)	102	109	105	105	114	93	119	132	86	97
PP (µg P/L)	1.4	1.3	1.2	1.7	1.5	1.6	0.6	1.7	1.5	1.7
Chlorophyll ($\mu g/L$)	0.73	0.76	0.77	0.90	0.90	0.83	0.81	0.78	0.88	0.58
Alg. Volume (mm^3/m^3)	2030	1418	1820	1455	1411	1528	1502	1780	1384	1090
Alg. Carbon (mg C/m^3)	155	119	157	126	120	135	122	146	125	93
Pr. Prod. (mg $C/m^3/h$)a	0.47	0.33	0.97	1.02	0.75	0.54	0.32	0.20	0.26	
Pr. Prod. (mg $C/m^3/h$)b	0.17	0.10	0.38	0.44	0.30	0.24	0.12	0.08	0.11	

a Total Primary Production (>0.2 µm)
b Fractionated Primary Production (>2.0 µm)

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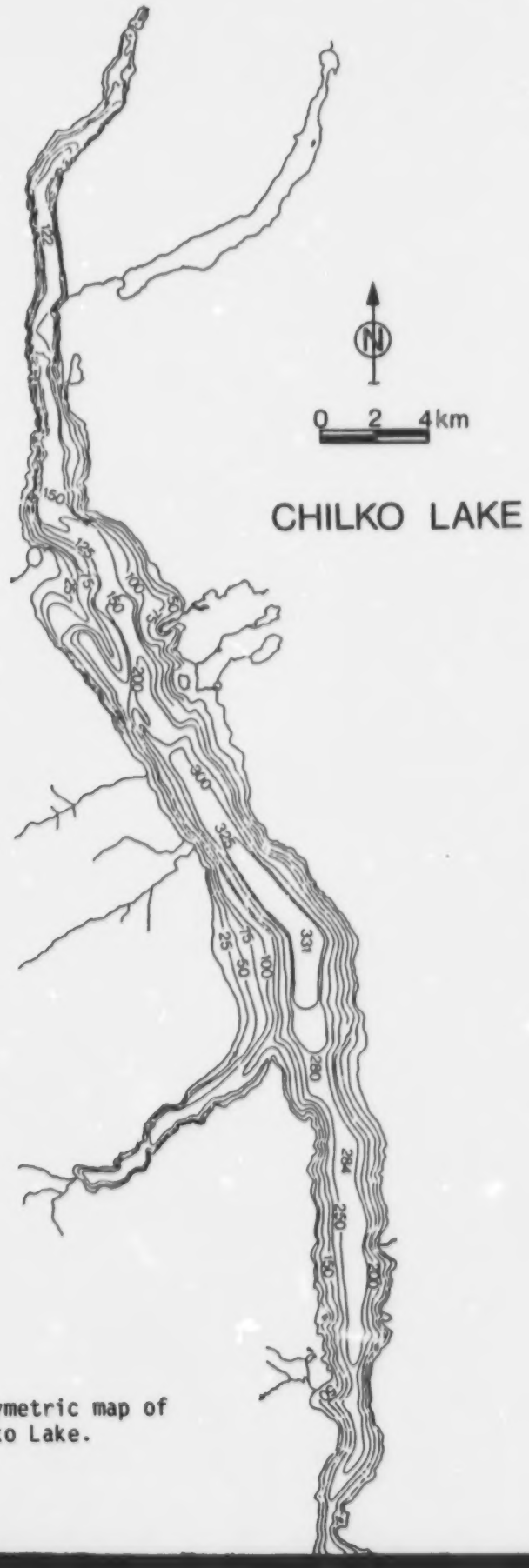
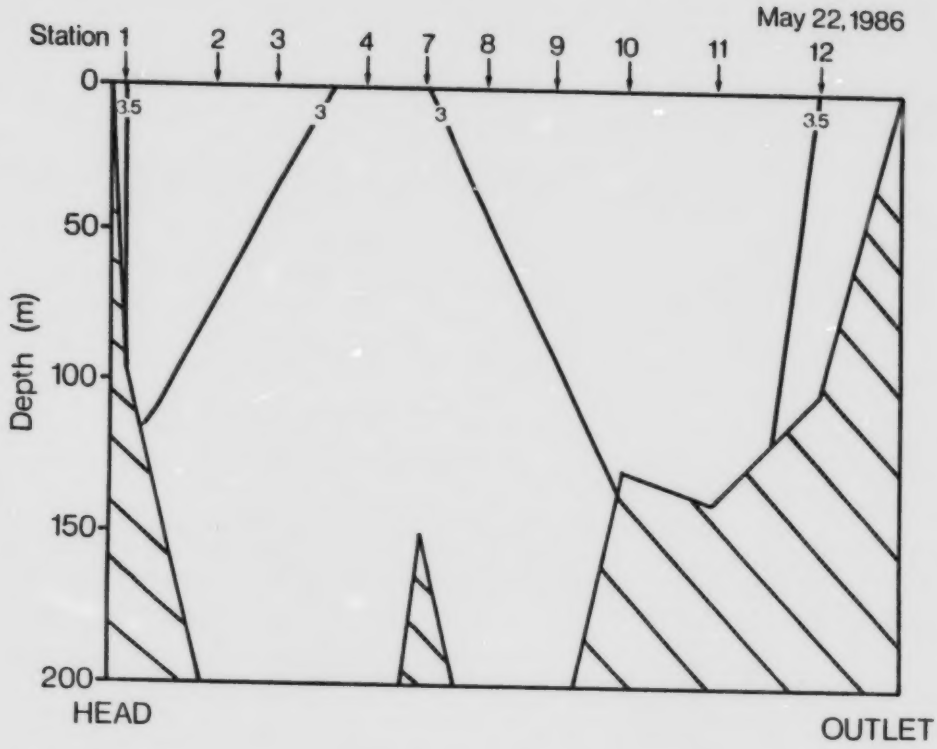


Fig. 2.1. Bathymetric map of Chilko Lake.



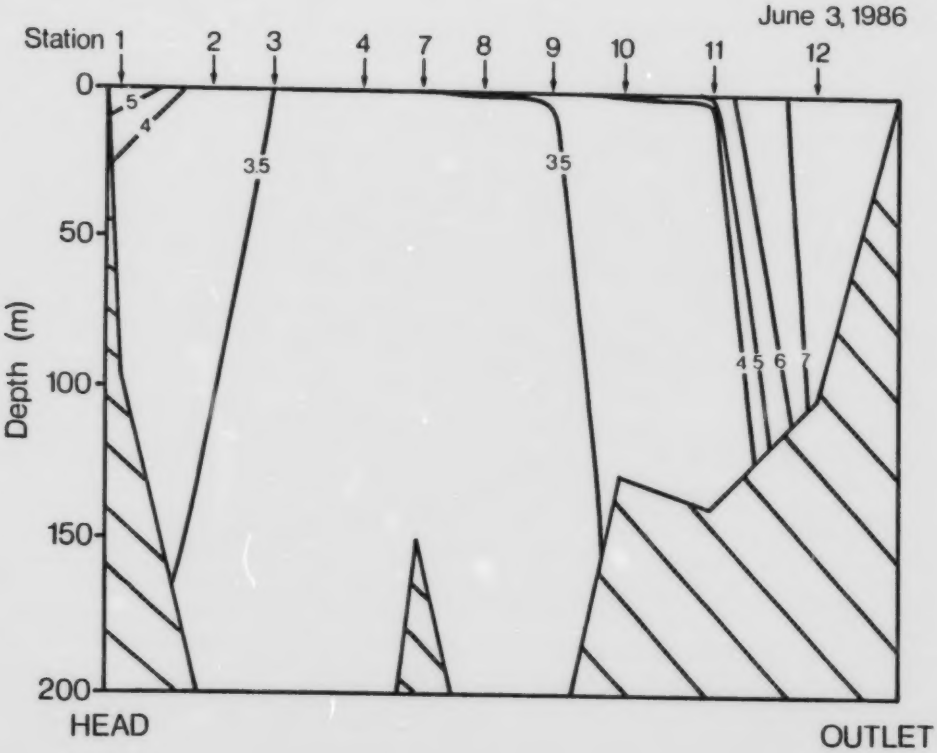
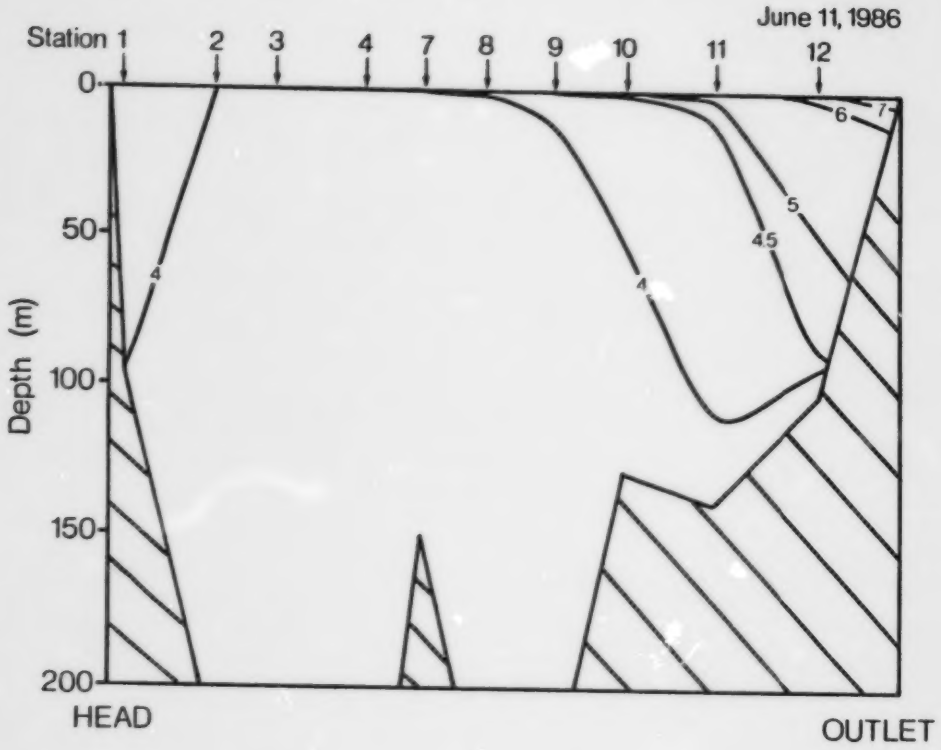


Fig. 2.2. Chilko Lake isotherms.



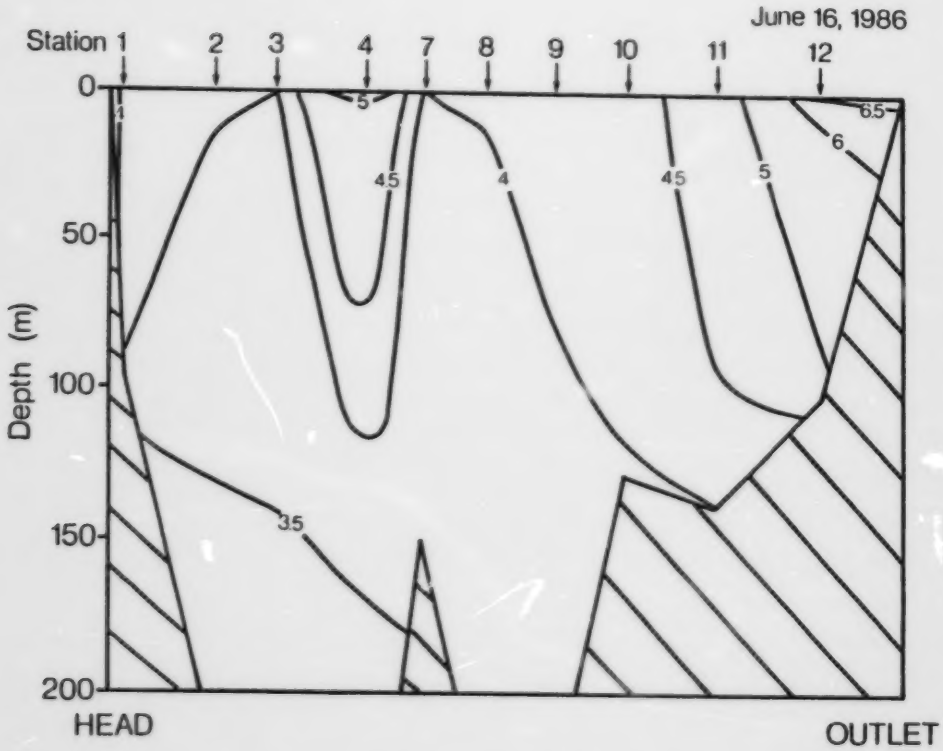
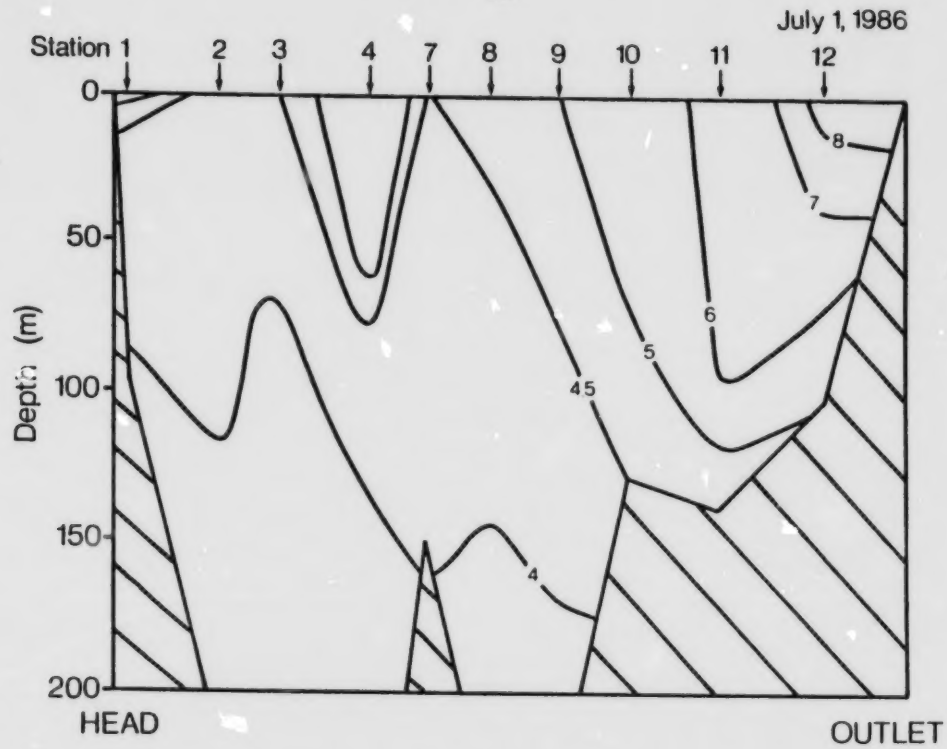


Fig. 2.3. Chilko Lake isotherms.



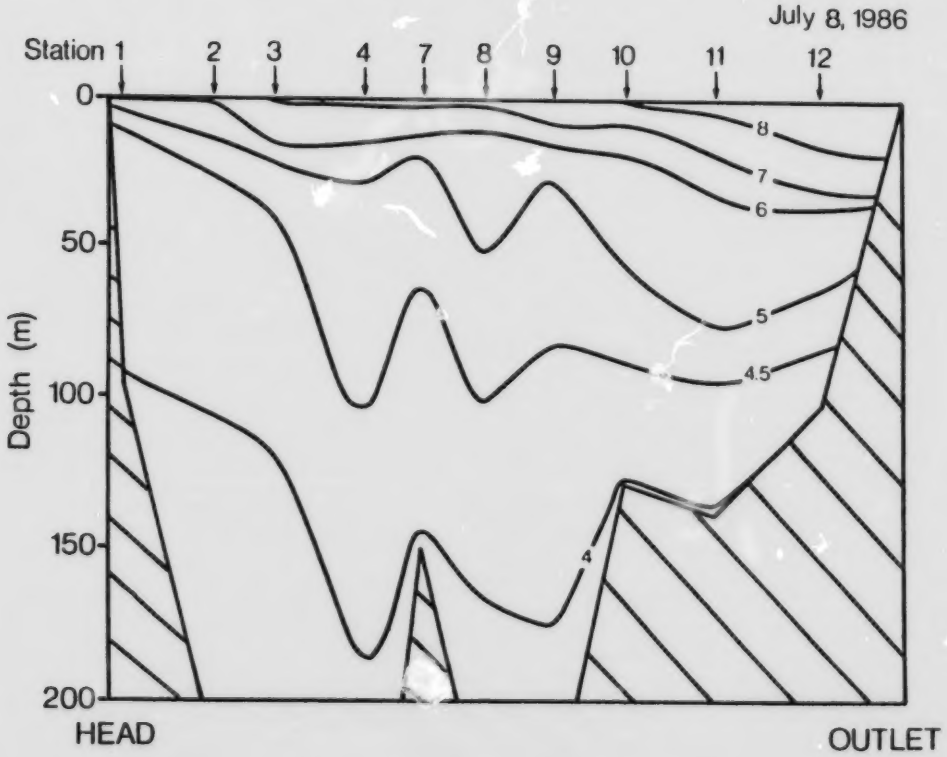
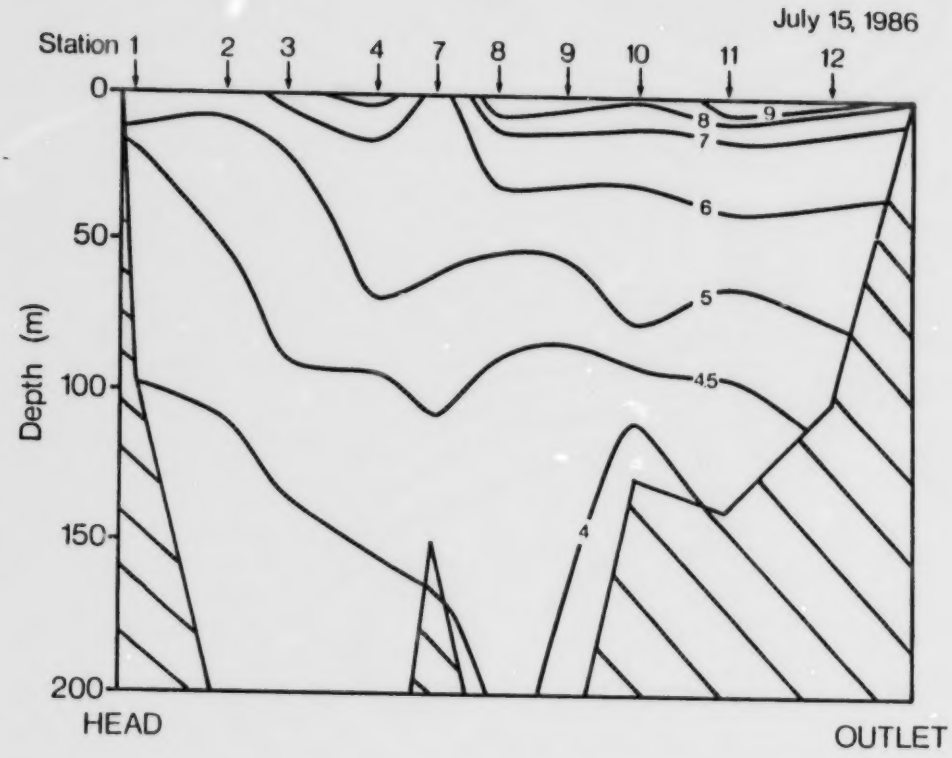


Fig. 2.4. Chilko Lake isotherms.



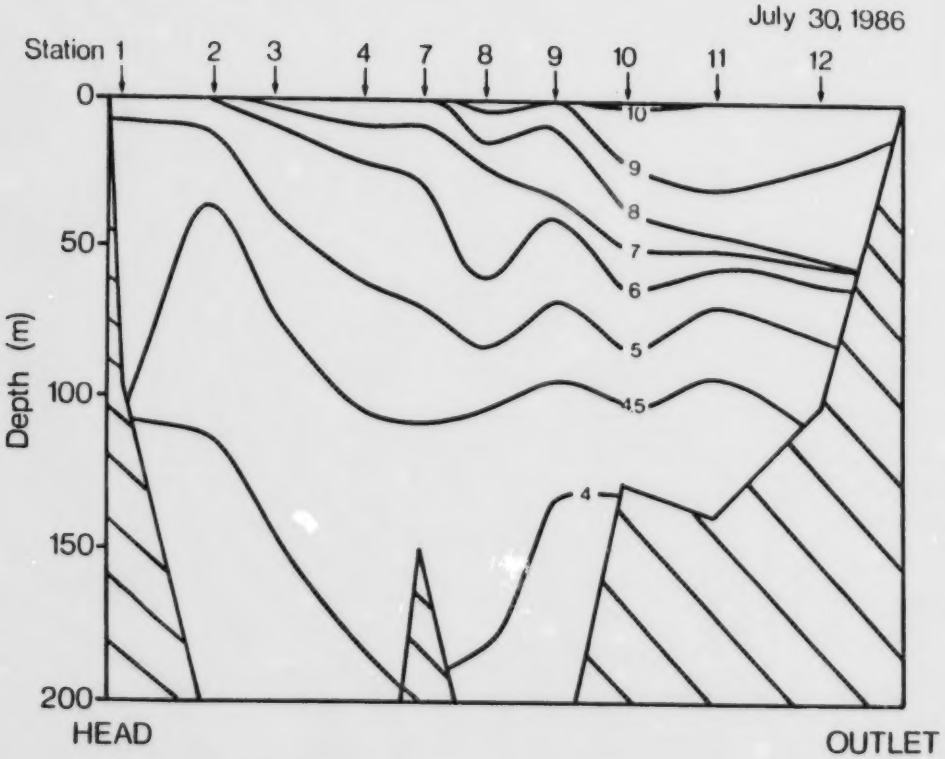
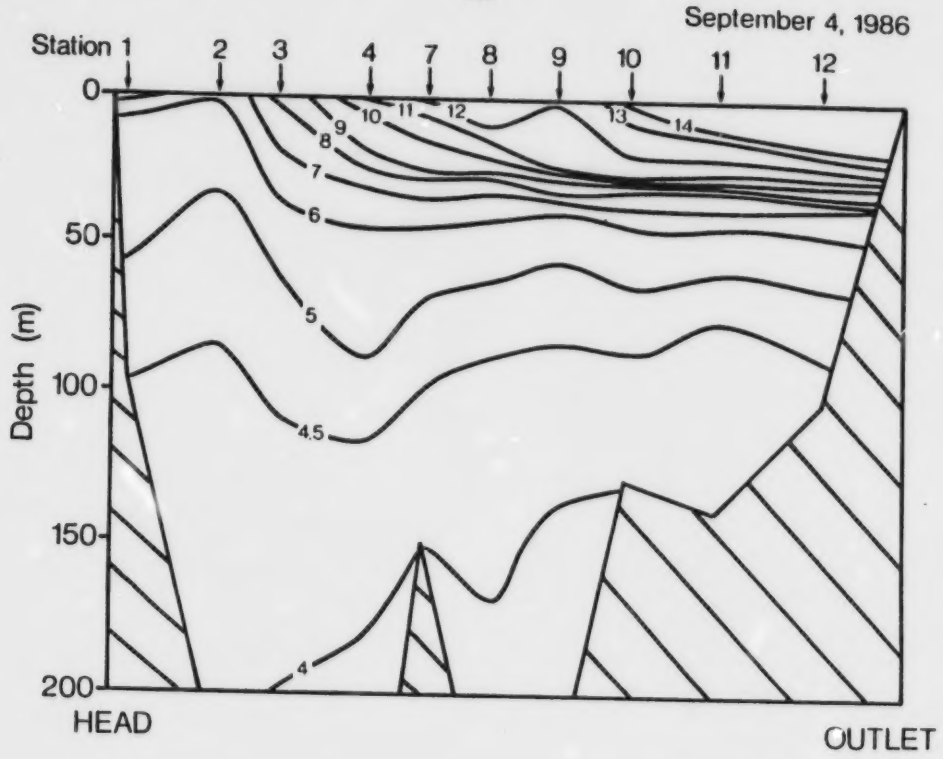


Fig. 2.5. Chilko Lake isotherms.



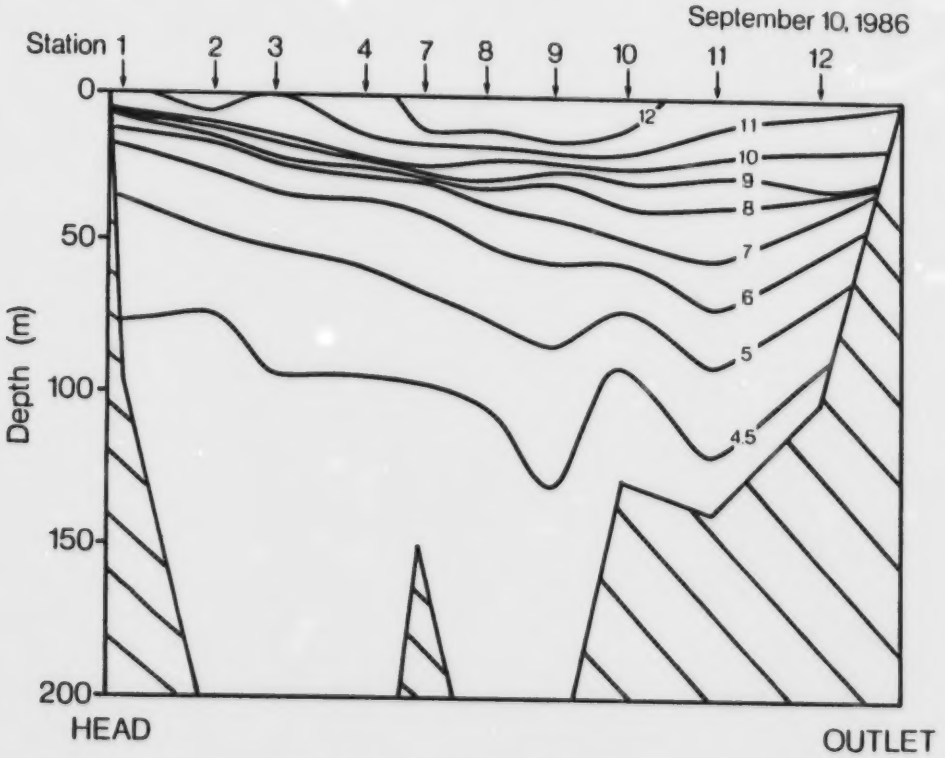
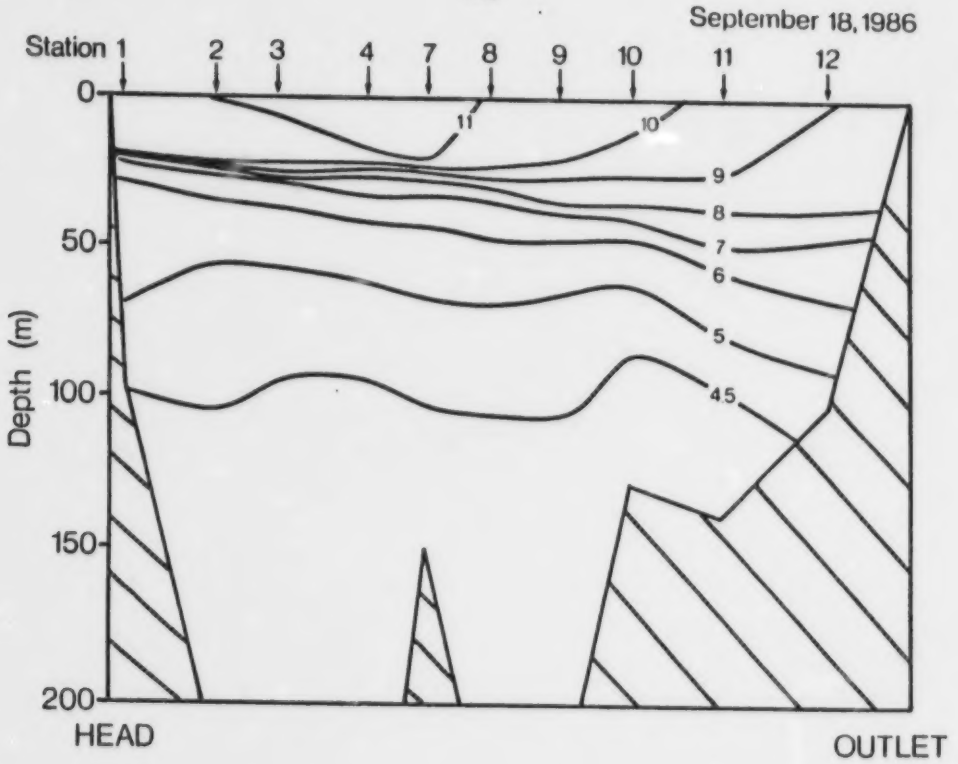


Fig. 2.6. Chilko Lake isotherms.



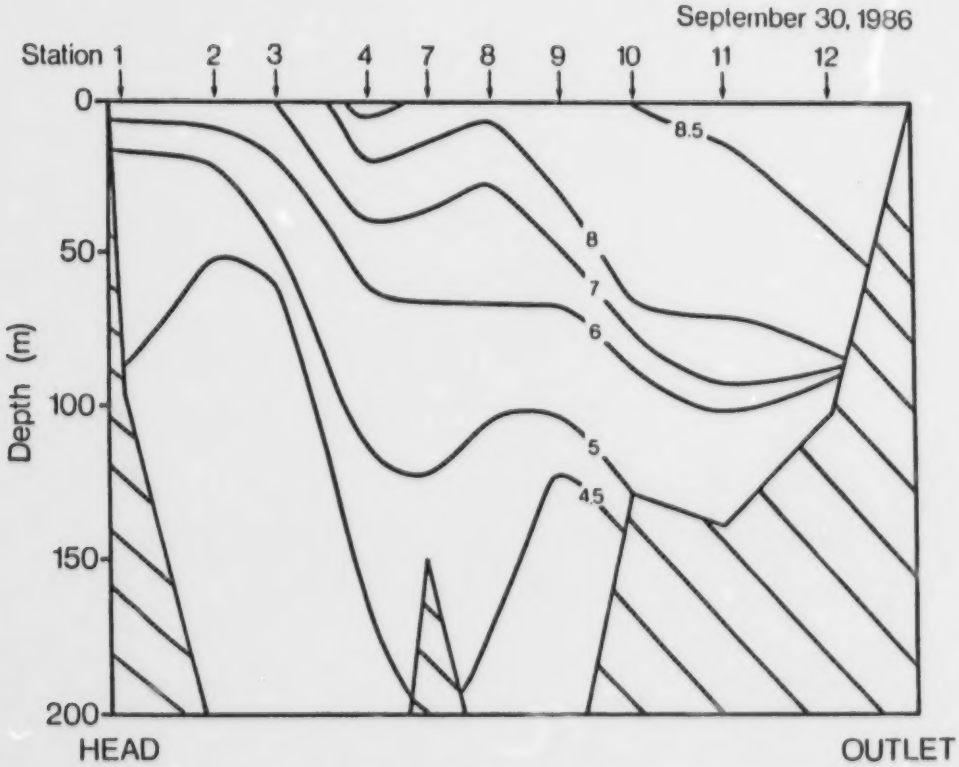


Fig. 2.7. Chilko Lake isotherms.

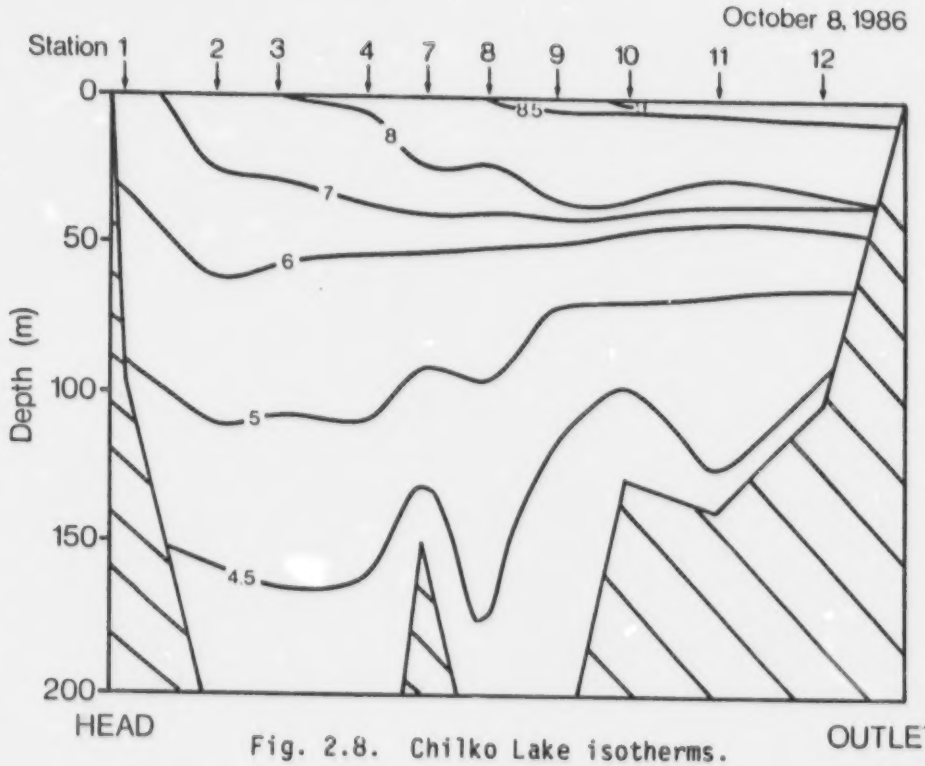


Fig. 2.8. Chilko Lake isotherms.

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Table 1. 1986 sampling dates.

Station	1	2	3	4	5	7	8
May	15	15	15	15	16	14	14
Jun	25	25	25	26	26	24	24
Jul	23	23	23	24	24	22	22
Aug	27	27	27	27	28	26	26
Sep	24	24	24	24	25	23	24
Oct	16	16	17	17	17	18	18

Table 2. Variation in surface temperature (^{o}C) during 1986.

Station		2	3	4	5	7	8
May	4.3	4.2	4.3	4.8	3.8	4.0	4.7
Jun	8.9	9.8	12.8	11.6	12.8	12.8	13.5
Jul	15.6	17.2	16.8	15.9	15.3	19.9	19.4
Aug	16.8	17.8	18.6	17.8	17.8	17.5	17.3
Sep	12.1	11.4	11.8	13.2	12.7	13.2	12.7
Oct	6.2	9.4	9.8	10.3	10.4	10.4	10.4
$\bar{X}$	13.9	14.6	15.0	14.2	14.3	15.3	15.2

Table 3. Variation in mean epilimnetic temperature (^{o}C) during 1986.

Station	1	2	3	4	5	7	8
May	3.8	3.7	3.6	3.5	3.6	3.7	4.2
Jun	6.0	7.2	9.4	9.4	8.5	9.5	10.1
Jul	15.3	15.9	16.4	14.2	12.7	15.2	15.3
Aug	16.5	17.1	17.8	17.6	17.6	16.7	16.5
Sep	11.4	10.8	11.3	13.2	12.7	13.1	12.4
Oct	5.1	7.9	8.6	10.3	10.2	10.4	10.5
$\bar{X}$	13.0	13.3	13.7	13.2	12.5	13.1	13.0

Table 4. Variation in depth of maximum stability (m) during 1986.

Station	1	2	3	4	5	7	8
May	U	U	U	U	U	U	U
Jun	U		*2.6	*16.7	*7.1	*11.1	*16.7
Jul	9.1	11.7	7.3	10.2	11.2	13.0	13.9
Aug	10.8	15.9	15.0	10.6	12.9	14.5	16.0
Sep	5.4	14.4	28.9	14.0	22.8	22.0	25.0
Oct	U	U	U	34.6	18.5	20.3	20.8
$\bar{X}$	9.1	14.4	12.5	12.5	13.6	15.3	17.4

*weak

Table 5. Variation in Secchi depth (m) during 1986.

Station	1	2	3	4	5	7	8
May	17.0	18.0	19.5	>20.0	13.0	12.3	9.0
Jun	4.7	7.3	7.0	8.0	6.8	6.1	5.0
Jul	7.2	11.0	12.5	9.4	11.2	7.8	9.0
Aug	6.0	9.0	10.5	10.5	11.0	10.0	10.8
Sep	6.2	9.5	9.8	11.2	10.8	10.2	13.0
Oct	14.0		12.3	12.0	11.2	9.5	15.5
$\bar{X}$	6.2	9.4	10.5	10.2	10.1	8.6	9.2

Table 6. Variation in compensation depth (m) during 1986.

Station	1	2	3	4	5	7	8
May	22.6	24.9	22.3	17.8	22.3	15.8	14.1
Jun	13.6	15.1	14.3	12.2	8.8	8.8	
Jul	11.7	17.6	15.0	15.3	13.5	12.1	14.8
Aug	11.6	15.3	15.4	16.5	16.3	14.3	14.9
Sep	17.1	16.0	18.4	17.5	17.4	19.1	19.2
Oct	12.7	11.7	14.0	17.6	12.9	16.9	14.2
$\bar{X}$	13.0	16.2	15.7	15.4	14.1	13.3	15.4

Table 7. Variation in mean extinction coefficient (k_e) during 1986.

Station	1	2	3	4	5	7	8
May	0.19	0.17	0.19	0.25	0.19	0.27	0.31
Jun	0.32	0.28	0.30	0.36	0.48	0.48	
Jul	0.37	0.23	0.28	0.28	0.32	0.37	0.30
Aug	0.36	0.29	0.29	0.25	0.26	0.29	0.28
Sep	0.26	0.26	0.23	0.24	0.24	0.20	0.22
Oct	0.31	0.32	0.30	0.24	0.31	0.25	0.28
$\bar{X}$	0.34	0.26	0.28	0.28	0.32	0.34	0.28

Table 8. Variation in mean epilimnetic pH, total alkalinity (mg/L $CaCO_3$) and dissolved inorganic carbon (mg/L) during 1986.

	pH		Alkalinity		DIC	
Station	5	7	5	7	5	7
May	6.8	6.8	48.25	48.42	17.44	17.53
Jun	7.4	7.0	42.66	40.98	11.25	13.32
Jul	7.3	7.5	44.00	42.20	11.96	10.97
Aug	7.7	7.8	44.34	43.79	11.18	10.95
Sep	7.4	7.5	45.31	43.87	11.94	11.39
Oct	7.5	7.4	42.17	45.04	10.95	12.02
$\bar{X}$	7.4	7.4	44.15	42.97	11.82	12.00

Table 9. Variation in mean epilimnetic total dissolved nitrogen (µg N/L) during 1986.

Station	1	2	3	4	5	7	8
May	330	372	334	350	380	350	375
Jun	230	246	224	194	210	209	198
Jul	294	388	357	197	240	213	260
Aug	290	169	160	145	153	374	352
Sep	352	335	185	215	239	208	184
Oct	258	243	270	202	187	238	231
$\bar{X}$	288	279	245	193	216	259	262

Table 10. Variation in mean epilimnetic nitrate (µg N/L) during 1986.

Station	1	2	3	4	5	7	8
May	128	127	128	122	123	120	108
Jun	118	107	88	83	77	73	73
Jul	74	68	65	65	67	49	53
Aug	47	43	53	47	40	45	51
Sep	26	39	43	35	52	50	57
Oct	56	92	84	60	61	59	63
$\bar{X}$	68	68	68	62	62	58	62

Table 11. Variation in mean epilimnetic ammonia (µg N/L) during 1986.

Station	1	2	3	4	5	7	8
May	<4	<4	<4	<4	<4	<4	<4
Jun	5	4	6	6	5	6	4
Jul	6	<4	<4	4	6	<4	7
Aug	11	5	6	4	5	5	13
Sep	10	5	5	10	6	6	6
Oct	5	6	7	4	<4	7	6
$\bar{X}$	8	4	5	6	5	5	7

Table 12. Variation in mean epilimnetic total phosphorus (µg P/L) during 1986.

Station	1	2	3	4	5	7	8
May	3.0	2.0	2.2	2.2	2.7	3.2	3.2
Jun	1.8	3.0	3,3	3.0	5.0	5.5	4.3
Jul	2.0	1.3	1.0	1.7	2.0	3.7	2.7
Aug	1.7	<1.0	1.3	1.3	1.5	<1.0	<1.0
Sep	2.5	2.3	2.0	1.7	2.0	1.8	2.3
Oct	1.5	2.5	2.5	2.0	3.5	3.8	3.0
$\bar{X}$	1.9	1.8	1.9	1.9	2.7	3.1	2.6

Table 13. Variation in mean epilimnetic particulate phosphorus (µg P/L) during 1986.

Station	1	2	3	4	5	7	8
May	0.7	0.7	0.8	1.0	0.9	1.6	1.7
Jun	1.9	1.7	2.4	1.9	3.4	3.1	2.4
Jul	1.4	1.3	1.4	1.0	1.7	2.2	1.9
Aug	0.9	0.5	0.5	0.4	1.5	1.2	0.9
Sep	1.6	1.2	1.1	1.0	1.0	1.4	1.1
Oct	0.5	0.5	0.6	0.6	0.8	0.8	1.0
$\bar{X}$	1.4	1.1	1.4	1.1	1.9	2.0	1.6

Table 14. Variation in mean epilimnetic particulate carbon (µg C/L) during 1986.

Station	1	2	3	4	5	7	8
May	128	121	203	133	131	114	195
Jun	142	165	183	169	283	236	283
Jul	235	176	154	217	226	222	270
Aug	162	175	172	171	222	191	174
Sep	189	200	223	179	177	190	215
Oct	177	214	159	182	180	206	196
$\bar{X}$	184	174	177	182	226	206	235

Table 15. Variation in mean epilimnetic particulate nitrogen (µg N/L) during 1986.

Station	1	2	3	4	5	7	8
May	9	9		19	14	10	18
Jun	14	18	22	22	40	28	32
Jul	30	25	22	24	27	28	31
Aug	24	24	25	18	26	24	23
Sep	26	12	12	22	20	23	14
Oct	34	69	20	22	21	31	15
$\bar{X}$	24	21	22	21	28	25	25

Table 16. Variation in mean epilimnetic total chlorophyll (µg/L) during 1986.

Station	1	2	3	4	5	7	8
May	0.32	0.33	0.28	0.40	0.37	0.50	0.68
Jun	0.36	0.66	0.74	1.14	1.57	1.30	1.82
Jul	0.86	0.85	0.73	0.85	0.88	1.20	1.27
Aug	1.27	0.57	0.62	1.00	1.19	0.76	0.76
Sep	1.16	0.80	0.90	1.21	0.92	1.21	0.93
Oct		0.96	1.28	1.29	1.47	1.32	1.49
$\bar{X}$	0.92	0.70	0.70	1.01	1.12	1.08	1.19

Table 17. Variation in mean epilimnetic chlorophyll (µg/L) (0.8-3.0 µm size fraction) during 1986.

Station	1	2	3	4	5	7	8
Jun	0.2[illegible]	0.38	0.52	0.57	0.70	0.61	0.67
Jul	0.44	0.45	0.42	0.59	0.61	0.93	0.83
Aug	*0.44	*0.57	*0.63	*0.68	*0.87	*0.52	*0.46
Sep	0.22	0.40	0.45	0.56	0.57	0.52	0.64
Oct	*0.20	*0.51	*0.73	*0.65	*0.73	*0.70	*0.81
$\bar{X}$	0.37	0.47	0.51	0.61	0.70	0.66	0.65

*0.8-2.0 um

Table 18. Variation in mean epilimnetic chlorophyll (µg/L) (>3.0 µm size fraction) during 1986.

Station	1	2	3	4	5	7	8
Jun	0.14	0.23	0.31	0.40	0.56	0.36	0.44
Jul	0.33	0.32	0.25	0.46	0.49	0.47	0.52
Aug	*0.44	*0.46	*0.53	*0.69	*0.99		*0.41
Sep	0.87	0.54	0.45	0.47	0.40	0.54	0.46
Oct	*0.20	*0.44	*0.59	*0.57	*0.66	*0.70	*0.69
$\bar{X}$	0.42	0.38	0.38	0.53	0.64	0.49	0.46

*>0.2 um

Table 19. Variation in mean epilimnetic bacteria numbers ($X10^6$/mL) during 1986.

Station	1	2	3	4	5	7	8
May	0.26	0.14	0.18	0.28	0.18	0.68	0.72
Jun	0.31	0.28	0.33	0.47	0.49	0.41	0.32
Jul	0.19	0.50	0.57	0.26	0.27	0.39	0.33
Aug	0.17	0.18	0.20	0.16	0.69	0.37	0.37
Sep	0.48	0.46		0.25	0.23	0.44	0.51
Oct	0.19	0.34	0.27	0.27	0.32	0.84	0.85
$\bar{X}$	0.25	0.33	0.34	0.28	0.42	0.42	0.40

Table 20. Variation in mean epilimnetic TDS (mg/L) during 1986.

Station	1	2	3	4	5	7	8
May	59.6	58.9	57.6	57.7	57.1	62.9	67.6
Jun	65.2	61.7	62.7	56.1	55.3	56.4	29.8
Jul	57.3	58.7	56.0	50.7	52.7	51.3	58.7
Aug	54.7	61.3	56.8	54.0	53.2	68.0	58.7
Sep	86.0	70.4	85.1	50.9	59.5	59.9	57.9
Oct	52.5	52.8	47.3	50.0	45.9	52.0	65.6
$\bar{X}$	62.4	61.5	61.4	53.2	54.8	58.9	51.8

Table 21. Variation in primary production (mg $C/m^3/h$) during 1986.

	>0.2 µm		0.2-3.0 µm		>3.0 µm	
Station	5	7	5	7	5	7
May	0.32	0.54	0.07	0.18	0.25	0.36
Jun	1.91	3.77	*0.75	*1.43	**1.16	**2.34
Jul	0.78	0.83	0.35	0.20	0.43	0.63
Aug	0.44	0.85	*0.14	*0.57	**0.30	**0.28
Sep	0.90	0.67	*0.40	*0.34	**0.50	**0.33
Oct	0.83	0.67	*0.33	*0.26	**0.50	**0.41
$\bar{X}$	0.97	1.52	0.39	0.62	0.58	0.90

*0.2-2.0 µm
**2.0 µm

Table 22. Variation in integrated hourly primary production (mg $C/m^2/h$), daily primary production (mg $C/m^2/d$) and primary production per unit of light (mg C/Einstein) during 1986.

	mg $C/m^2/h$		mg $C/m^2/d$		mg C/Einstein	
Station	5	7	5	7	5	7
May	7.10	8.52	69.72	83.18	3.48	2.97
Jun	16.81	33.17	241.59	292.67	4.28	5.99
Jul	10.60	10.05	114.17	141.86	2.73	4.26
Aug	7.21	12.10	54.07	115.40	3.18	3.10
Sep	8.78	12.86	141.53	75.96	6.50	11.19
Oct	10.66	11.40	66.54	101.82	7.89	12.66
$\bar{X}$	10.80	16.75	132.50	157.39	3.97	5.69

Table 23. Variation in mean epilimnetic algal volume (mm^3/m^3) during 1986.

Station	1	2	3	4	5	7	8
May	804	704	631	703	686	773	1104
Jun	962	1020	1784	1591	1635	1297	1547
Jul	1054	1033	941	1759	1051	889	1615
Aug	2002	1676	1411	2042	1299	1039	1188
Sep	2653	1894	1317	2487	1456	1442	1633
Oct	1247	1232	1632	1388	1960	1910	1839
$\bar{X}$	1563	1312	1328	1862	1324	1137	1464

Table 24. Variation in mean epilimnetic algal carbon (mg C/m^3) during 1986.

Station	1	2	3	4	5	7	8
May	63	59	53	58	56	68	88
Jun	79	88	152	140	182	128	138
Jul	97	97	102	150	112	102	195
Aug	183	149	130	155	112	98	108
Sep	201	143	110	184	118	121	129
Oct	98	102	130	121	153	150	148
$\bar{X}$	135	115	122	150	128	110	140

Table 25. Variation in zooplankton biomass (mg dry weight/m^3) during 1986.

Station		2	3	4	5	7	8
May	8.3	5.0	9.3	4.1	6.1	14.6	14.8
Jun	6.7	14.3	54.1	28.6	33.2	27.3	27.2
Jul	23.7	39.7	36.2	32.2	41.1	18.2	19.9
Aug	20.2	23.7	24.7	20.6	15.2	20.0	17.8
Sep	11.7	18.4	15.0	27.5	6.7	49.0	22.6
Oct	4.7	9.6	4.7	7.8	4.6	3.9	7.9
$\bar{X}$	17.0	25.4	34.0	25.8	24.6	26.0	21.2

Table 26. Variation in zooplankton ash-free dry weight (mg/m^3) during 1986.

Station	1	2	3	4	5	7	8
May	7.7	4.6	8.4	3.0	5.6	13.6	13.4
Jun	6.1	13.1	50.3	26.5	31.2	25.5	25.3
Jul	22.4	37.5	34.4	30.5	38.7	17.5	18.8
Aug	18.6	22.2	23.1	15.2	11.3	14.2	16.9
Sep	10.7	16.9	11.1	25.3	5.3	42.3	20.9
Oct	4.1	8.6	4.1	7.0	3.9	3.4	6.7
$\bar{X}$	15.8	23.8	31.6	23.0	22.2	22.6	19.9

Table 27. Physical, chemical and biological data from Quesnel Lake, Stn. 1, May 15, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	4.0	3.8	3.7	3.7
TDS (mg/L)		59.6		
TDN (µg N/L)	350	301	357	311
Ammonia (µg N/L)	<4	<4	<4	<4
Nitrate (µg N/L)	125	129	129	129
PN (µg N/L)	9	11	9	8
PC (µg C/L)	124	128	150	110
TP (µg P/L)	3.0	2.0	2.0	5.0
PP (µg P/L)	0.6	0.8	0.6	0.8
Bacteria (X10^{6}/mL)	0.29	0.27	0.22	
Chlorophyll (µg/L)	0.28	0.34	0.34	0.33
Alg. Volume (mm^{3}/m^{3})	902	765	744	
Alg. Carbon (mg C/m^{3})	69	61	59	

Table 28. Physical, chemical and biological data from Quesnel Lake, Stn. 1, June 25, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	8.2	6.8	5.1	3.8
TDS (mg/L)		65.2		
TDN (µg N/L)	248	227	227	216
Ammonia (µg N/L)	4	<4	6	5
Nitrate (µg N/L)	113	116	119	123
PN (µg N/L)	18	15	15	11
PC (µg C/L)	151	126	172	121
TP (µg P/L)	2.0	2.0	2.0	1.0
PP (µg P/L)	1.3	1.5	4.0	0.8
Bacteria (X10^{6}/mL)	0.26	0.34	0.32	
Chlorophyll (µg/L)a	0.44	0.38	0.36	0.25
Chlorophyll (µg/L)b	0.34	0.28	0.16	0.08
Chlorophyll (µg/L)c	0.15	0.20	0.10	0.10
Alg. Volume (mm^{3}/m^{3})	574	1688	1101	485
Alg. Carbon (mg C/m^{3})	67	122	89	40

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 29. Physical, chemical and biological data from Quesnel Lake, Stn. 1, July 23, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	15.4	15.2	13.5	4.8
TDS (mg/L)		57.3		
TDN (µg N/L)	246	343	306	355
Ammonia (µg N/L)	<4	7	9	5
Nitrate (µg N/L)	73	75	77	128
PN (µg N/L)	25	33	33	12
PC (µg C/L)	199	262	244	113
TP (µg P/L)	2.0	2.0	3.0	4.0
PP (µg P/L)	1.5	1.4	1.6	1.4
Bacteria (X10^{6}/mL)	0.21	0.17	0.21	
Chlorophyll (µg/L)a	0.85	0.88	0.88	0.14
Chlorophyll (µg/L)b	0.43	0.46	0.44	<0.12
Chlorophyll (µg/L)c	0.29	0.31	0.38	<0.12
Alg. Volume (mm^{3}/m^{3})	1181	927	1120	
Alg. Carbon (mg C/m^{3})	108	85	110	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 30. Physical, chemical and biological data from Quesnel Lake, Stn. 1, August 27, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	16.8	16.6	15.9	4.6
TDS (mg/L)		54.7		
TDN (µg N/L)	336	343	190	210
Ammonia (µg N/L)	11		12	13
Nitrate (µg N/L)	45	46	49	130
PN (µg N/L)	24	24	23	16
PC (µg C/L)	142	189	155	107
TP (µg P/L)	2.0	2.0	<1.0	1.0
PP (µg P/L)	0.9	1.2	0.7	0.6
Bacteria (X10^{6}/mL)	0.25	0.17	0.10	
Chlorophyll (µg/L)a	1.22	1.61	0.98	0.26
Chlorophyll (µg/L)b	0.46	0.49	0.46	0.24
Chlorophyll (µg/L)c	0.39	0.43	0.51	<0.12
Alg. Volume (mm^{3}/m^{3})	2123	1920	1964	652
Alg. Carbon (mg C/m^{3})	203	169	177	54

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 31. Physical, chemical and biological data from Quesnel Lake, Stn. 1, September 24, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	12.1	10.8	5.5	4.3
TDS (mg/L)		86.0		
TDN (µg N/L)	377	326	345	345
Ammonia (µg N/L)	8	13	<4	8
Nitrate (µg N/L)	26	26	79	91
PN (µg N/L)	27	26	8	7
PC (µg C/L)	180	198	261	181
TP (µg P/L)	3.0	2.0	2.0	2.0
PP (µg P/L)	1.5	1.6	1.1	0.6
Bacteria (X10^{6}/mL)	0.46	0.49	0.30	
Chlorophyll (µg/L)a	1.25	1.06	0.22	<0.12
Chlorophyll (µg/L)b	0.31	<0.12	<0.12	<0.56
Chlorophyll (µg/L)c	0.81	0.93	0.31	<0.12
Alg. Volume (mm^3/m^3)	2552	2754	820	433
Alg. Carbon (mg C/m^3)	193	208	69	41

a >0.8 µm b 0.8-3.0 µm >3.0 µm

Table 32. Physical, chemical and biological data from Quesnel Lake, Stn. 1, October 16, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	6.0	5.2	4.9	4.3
TDS (mg/L)		52.5		
TDN (µg N/L)	211	273	297	250
Ammonia (µg N/L)	6	6	<4	<4
Nitrate (µg N/L)	26	26	79	91
PN (µg N/L)	36	43	32	24
PC (µg C/L)	161	244	146	157
TP (µg P/L)	2.0	2.0	1.0	1.0
PP (µg P/L)	0.8	0.5	0.4	0.4
Bacteria (X10^{6}/mL)	0.20	0.18	0.20	
Chlorophyll (µg/L)b	0.38	0.16	0.14	<0.12
Chlorophyll (µg/L)c	0.38	0.16	<0.12	<0.12
Alg. Volume (mm^3/m^3)	1660	1835	1102	391
Alg. Carbon (mg C/m^3)	125	142	91	36

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 33. Physical, chemical and biological data from Quesnel Lake, Stn. 2, May 15, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	3.8	3.7	3.6	3.6
TDS (mg/L)		58.9		
TDN (µg N/L)	312	371	473	334
Ammonia (µg N/L)	<4	<4	<4	<4
Nitrate (µg N/L)	122	128	129	129
PN (µg N/L)	9	8	10	
PC (µg C/L)	116	124	110	133
TP (µg P/L)	2.0	2.0	2.0	2.0
PP (µg P/L)	0.6	0.6	0.7	0.8
Bacteria (X10^{6}/mL)	0.19	0.11	0.12	
Chlorophyll (µg/L)	0.39	0.29	0.31	0.33
Alg. Volume (mm^{3}/m^{3})	736	871	506	
Alg. Carbon (mg C/m^{3})	60	72	44	

Table 34. Physical, chemical and biological data from Quesnel Lake, Stn. 2, June 25, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	9.8	8.1	6.8	4.0
TDS (mg/L)		61.7		
TDN (µg N/L)	253	232	215	283
Ammonia (µg N/L)	5	<4	<4	4
Nitrate (µg N/L)	102	100	107	119
PN (µg N/L)	21	21	18	13
PC (µg C/L)	185	164	154	156
TP (µg P/L)	3.0	4.0	3.0	2.0
PP (µg P/L)	1.7	1.9	2.4	0.9
Bacteria (X10^{6}/mL)	0.29	0.25	0.29	
Chlorophyll (µg/L)a	0.60	0.90	0.77	0.38
Chlorophyll (µg/L)b	0.47	0.60	0.33	0.13
Chlorophyll (µg/L)c	0.23	0.39	0.18	0.11
Alg. Volume (mm^{3}/m^{3})	1279	1054	1213	534
Alg. Carbon (mg C/m^{3})	112	94	102	44

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 35. Physical, chemical and biological data from Quesnel Lake, Stn. 2, July 23, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	17.0	16.2	14.4	4.6
TDS (mg/L)		58.7		
TDN (µg N/L)	362	396	406	312
Ammonia (µg N/L)	4	<4	<4	5
Nitrate (µg N/L)	66	66	73	122
PN (µg N/L)	26	25	24	14
PC (µg C/L)	180	172	177	131
TP (µg P/L)	1.0	2.0	1.0	2.0
PP (µg P/L)	1.4	1.2	1.3	1.0
Bacteria (X10^{6}/mL)	0.49	0.47	0.54	
Chlorophyll (µg/L)a	0.80	0.88	0.88	0.28
Chlorophyll (µg/L)b	0.44	0.49	0.43	0.12
Chlorophyll (µg/L)c	0.29	0.33	0.33	0.12
Alg. Volume (mm^3/m^3)	1396	974	730	
Alg. Carbon (mg C/m^3)	120	97	75	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 36. Physical, chemical and biological data from Quesnel Lake, Stn. 2, August 27, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	17.5	17.1	16.1	4.9
TDS (mg/L)		61.3		
TDN (µg N/L)	130	178	200	190
Ammonia (µg N/L)	6	3	7	5
Nitrate (µg N/L)	41	42	47	128
PN (µg N/L)	23	25	24	16
PC (µg C/L)	164	181	179	91
TP (µg P/L)	<1.0	<1.0	<1.0	<1.0
PP (µg P/L)	0.4	0.5	0.5	0.4
Bacteria (X10^{6}/mL)	0.22	0.20	0.12	
Chlorophyll (µg/L)a	0.49	0.58	0.64	0.27
Chlorophyll (µg/L)c	0.36	0.49	0.53	<0.12
Alg. Volume (mm^3/m^3)	1379	2076	1573	416
Alg. Carbon (mg C/m^3)	127	185	135	34

a >0.8 µm c >2.0 µm

Table 37. Physical, chemical and biological data from Quesnel Lake, Stn. 2, September 24, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	11.3	10.9	10.2	4.3
TDS (mg/L)		70.4		
TDN (µg N/L)	355	288	363	353
Ammonia (µg N/L)	<4	6	6	<4
Nitrate (µg N/L)	35	38	45	94
PN (µg N/L)	13	11	11	5
PC (µg C/L)	216	181	203	172
TP (µg P/L)	2.0	3.0	2.0	1.0
PP (µg P/L)	1.3	1.2	1.0	1.0
Bacteria (X10^{6}/mL)	0.41	0.46	0.50	
Chlorophyll (µg/L)a	0.91	0.78	0.72	0.24
Chlorophyll (µg/L)b	0.58	0.51	<0.12	0.46
Chlorophyll (µg/L)c	0.66	0.49	0.46	<0.12
Alg. Volume (mm^{3}/m^{3})	1727	2111	1843	575
Alg. Carbon (mg C/m^{3})	123	162	144	49

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 38. Physical, chemical and biological data from Quesnel Lake, Stn. 2, October 16, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	9.4	8.8	8.6	4.8
TDS (mg/L)		52.8		
TDN (µg N/L)	206	248	251	268
Ammonia (µg N/L)	<4	11	<4	<4
Nitrate (µg N/L)	72	79	80	137
PN (µg N/L)	69			
PC (µg C/L)	215			
TP (µg P/L)	2.0	3.0	3.0	2.0
PP (µg P/L)	0.8	0.5	0.4	0.4
Bacteria (X10^{6}/mL)	0.30	0.36	0.38	
Chlorophyll (µg/L)a	1.17	1.06	1.23	0.36
Chlorophyll (µg/L)b	0.81	0.61	0.43	0.19
Chlorophyll (µg/L)c	0.48	0.56	0.61	<0.12
Alg. Volume (mm^{3}/m^{3})	2080	1948	1814	319
Alg. Carbon (mg C/m^{3})	166	161	150	30

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 39. Physical, chemical and biological data from Quesnel Lake, Stn. 3, May 15, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	3.7	3.6	3.6	3.6
TDS (mg/L)		57.6		
TDN (µg N/L)	368	304	336	329
Ammonia (µg N/L)	<4	<4	<4	<4
Nitrate (µg N/L)	127	128	128	128
PN (µg N/L)				
PC (µg C/L)	180	265	181	187
TP (µg P/L)	2.0	2.0	3.0	2.0
PP (µg P/L)	0.7	0.9	0.8	0.8
Bacteria (X10^{6}/mL)	0.17	0.22	0.16	
Chlorophyll (µg/L)	0.13	0.33	0.33	0.33
Alg. Volume (mm^{3}/m^{3})	813	612	468	
Alg. Carbon (mg C/m^{3})	66	48	44	

Table 40. Physical, chemical and biological data from Quesnel Lake, Stn. 3, June 25, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	12.4	10.7	9.6	4.8
TDS (mg/L)		62.7		
TDN (µg N/L)	223	244	206	220
Ammonia (µg N/L)	5	10	<4	4
Nitrate (µg N/L)	86	87	92	114
PN (µg N/L)	24	30	22	13
PC (µg C/L)	187	208	152	185
TP (µg P/L)	3.0	3.0	4.0	2.0
PP (µg P/L)	1.7	3.0	2.5	1.5
Bacteria (X10^{6}/mL)	0.27	0.39	0.33	
Chlorophyll (µg/L)a	0.67	0.65	0.91	0.34
Chlorophyll (µg/L)b	0.65	0.51	0.69	0.21
Chlorophyll (µg/L)c	0.47	0.23	0.33	0.20
Alg. Volume (mm^{3}/m^{3})	1784	1442	4149	594
Alg. Carbon (mg C/m^{3})	152	127	441	47

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 41. Physical, chemical and biological data from Quesnel Lake, Stn. 3, July 23, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	16.4	16.3	12.6	4.0
TDS (mg/L)		56.0		
TDN (µg N/L)	324	390	217	221
Ammonia (µg N/L)	<4	4	4	<4
Nitrate (µg N/L)	66	64	74	125
PN (µg N/L)	20	22	23	14
PC (µg C/L)	155	155	152	115
TP (µg P/L)	1.0	1.0	2.0	1.0
PP (µg P/L)	0.9	1.8	1.3	0.8
Bacteria (X10^{6}/mL)	0.45	0.69	0.66	
Chlorophyll (µg/L)a	0.75	0.71	0.80	0.22
Chlorophyll (µg/L)b	0.43	0.38	0.46	0.12
Chlorophyll (µg/L)c	0.22	0.26	0.26	<0.12
Alg. Volume (mm^{3}/m^{3})	1113	770	820	
Alg. Carbon (mg C/m^{3})	121	84	79	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 42. Physical, chemical and biological data from Quesnel Lake, Stn. 3, August 27, 1986.

Depth (m)	1	5	16	40
Temperature (^{o}C)	18.1	17.2	11.9	5.0
TDS (mg/L)		56.8		
TDN (µg N/L)	129	178	174	175
Ammonia (µg N/L)	5	9	5	4
Nitrate (µg N/L)	38	42	78	131
PN (µg N/L)	24	26	27	18
PC (µg C/L)	161	183	173	113
TP (µg P/L)	<1.0	<1.0	2.0	2.0
PP (µg P/L)	0.3	0.6	0.7	0.4
Bacteria (X10^{6}/mL)	0.20	0.20	0.13	
Chlorophyll (µg/L)a	0.36	0.51	1.01	0.22
Chlorophyll (µg/L)c	0.33	0.44	0.83	<0.12
Alg. Volume (mm^{3}/m^{3})	1197	1626	1770	520
Alg. Carbon (mg C/m^{3})	108	151	164	42

a >0.8 µm c >2.0 µm

Table 43. Physical, chemical and biological data from Quesnel Lake, Stn. 3, September 24, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	11.7	11.5	10.7	5.1
TDS (mg/L)		85.1		
TDN (µg N/L)	180	196	180	210
Ammonia (µg N/L)	<4	6	6	<4
Nitrate (µg N/L)	39	40	49	107
PN (µg N/L)	11	12	13	9
PC (µg C/L)	218	216	235	211
TP (µg P/L)	2.0	2.0	2.0	1.0
PP (µg P/L)	1.1	1.2	1.0	1.0
Chlorophyll (µg/L)a	0.83	1.18	0.68	0.14
Chlorophyll (µg/L)b	0.51	0.39	0.46	0.14
Chlorophyll (µg/L)c	0.46	0.51	0.39	<0.12
Alg. Volume (mm^3/m^3)	885	1406	1661	304
Alg. Carbon (mg C/m^3)	88	111	129	28

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 44. Physical, chemical and biological data from Quesnel Lake, Stn. 3, October 17, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	9.6	9.4	9.4	5.9
TDS (mg/L)		47.3		
TDN (µg N/L)	285	188	279	328
Ammonia (µg N/L)	11	<4	9	5
Nitrate (µg N/L)	69	73	67	125
PN (µg N/L)	21	21	23	14
PC (µg C/L)	176	176	170	114
TP (µg P/L)	3.0	2.0	3.0	2.0
PP (µg P/L)	0.5	0.5	0.5	0.7
Bacteria ($X10^6$/mL)	0.25	0.31	0.25	
Chlorophyll (µg/L)a	1.18	1.57	1.83	0.54
Chlorophyll (µg/L)b	0.61	0.95	1.05	0.31
Chlorophyll (µg/L)c	0.61	0.71	0.86	0.19
Alg. Volume (mm^3/m^3)	2008	1609	2163	750
Alg. Carbon (mg C/m^3)	158	135	170	56

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 45. Physical, chemical and biological data from Quesnel Lake, Stn. 4, May 15, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	3.6	3.5	3.5	3.5
TDS (mg/L)		57.7		
TDN (µg N/L)	340	386	344	331
Ammonia (µg N/L)	<4	<4	<4	<4
Nitrate (µg N/L)	122	124	122	122
PN (µg N/L)		19	20	
PC (µg C/L)		135	148	115
TP (µg P/L)	2.0	3.0	2.0	2.0
PP (µg P/L)	0.9	1.0	1.0	1.3
Bacteria (X10^{6}/mL)	0.29	0.28	0.26	
Chlorophyll (µg/L)	0.39	0.41	0.41	0.39
Alg. Volume (mm^{3}/m^{3})	829	493	786	
Alg. Carbon (mg C/m^{3})	66	42	65	

Table 46. Physical, chemical and biological data from Quesnel Lake, Stn. 4, June 26, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	11.3	10.9	10.4	5.0
TDS (mg/L)		56.1		
TDN (µg N/L)	184	212	185	223
Ammonia (µg N/L)	9	8	5	4
Nitrate (µg N/L)	81	84	84	110
PN (µg N/L)	18	28	21	15
PC (µg C/L)	156	202	148	138
TP (µg P/L)	3.0	3.0	3.0	2.0
PP (µg P/L)	1.4	2.4	1.8	1.4
Bacteria (X10^{6}/mL)	0.40	0.55	0.47	
Chlorophyll (µg/L)a	0.86	1.34	1.21	0.44
Chlorophyll (µg/L)b	0.55	0.80	0.69	0.23
Chlorophyll (µg/L)c	0.39	0.51	0.44	0.26
Alg. Volume (mm^{3}/m^{3})	1648	1540	1585	1023
Alg. Carbon (mg C/m^{3})	127	146	145	77

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 47. Physical, chemical and biological data from Quesnel Lake, Stn. 4, July 24, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	15.5	15.3	11.8	4.3
TDS (mg/L)		50.7		
TDN (µg N/L)	207	192	192	263
Ammonia (µg N/L)	4	4	<4	5
Nitrate (µg N/L)	64	65	65	119
PN (µg N/L)	22	22	26	20
PC (µg C/L)	199	228	223	104
TP (µg P/L)	<1.0	2.0	2.0	2.0
PP (µg P/L)	1.0	1.0	0.9	0.9
Bacteria (X10^{6}/mL)	0.35	0.17	0.27	
Chlorophyll (µg/L)a	0.81	0.75	1.00	0.28
Chlorophyll (µg/L)b	0.54	0.54	0.70	0.16
Chlorophyll (µg/L)c	0.38	0.41	0.59	0.12
Alg. Volume (mm^{3}/m^{3})	1755	1661	1861	
Alg. Carbon (mg C/m^{3})	146	144	161	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 48. Physical, chemical and biological data from Quesnel Lake, Stn. 4, August 27, 1986.

Depth (m)	1	5	12	40
Temperature (^{o}C)	17.8	17.1	13.2	4.5
TDS (mg/L)		54.0		
TDN (µg N/L)	130	135	171	268
Ammonia (µg N/L)	3	4	4	3
Nitrate (µg N/L)	39	41	60	138
PN (µg N/L)	12	24	28	
PC (µg C/L)	160	182	257	
TP (µg P/L)	<1.0	2.0	<1.0	<1.0
PP (µg P/L)	0.4	0.3	0.6	0.7
Bacteria (X10^{6}/mL)	0.17	0.16	0.23	
Chlorophyll (µg/L)a	1.10	1.13	0.76	0.53
Chlorophyll (µg/L)b	0.48	0.51	1.05	0.24
Chlorophyll (µg/L)c	0.64	0.46	0.98	<0.12
Alg. Volume (mm^{3}/m^{3})	2126	1957	1776	481
Alg. Carbon (mg C/m^{3})	156	154	153	40

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 49. Physical, chemical and biological data from Quesnel Lake, Stn. 4, September 25, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	13.2	13.2	13.2	4.8
TDS (mg/L)		50.9		
TDN (µg N/L)	201	218	226	300
Ammonia (µg N/L)	8	14	7	5
Nitrate (µg N/L)	34	35	36	123
PN (µg N/L)		24	21	21
PC (µg C/L)		187	171	150
TP (µg P/L)	2.0	1.0	2.0	4.0
PP (µg P/L)	1.2	0.9	0.9	1.1
Bacteria (X10^{6}/mL)	0.24	0.21	0.30	
Chlorophyll (µg/L)a	1.22	1.15	1.27	0.36
Chlorophyll (µg/L)b	0.46	0.64	0.58	0.19
Chlorophyll (µg/L)c	0.56	0.63	0.21	0.56
Alg. Volume (mm^{3}/m^{3})	2926	1809	2726	644
Alg. Carbon (mg C/m^{3})	206	141	206	50

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 50. Physical, chemical and biological data from Quesnel Lake, Stn. 4, October 17, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	10.4	10.4	10.3	5.4
TDS (mg/L)		50.0		
TDN (µg N/L)	183	200	222	236
Ammonia (µg N/L)	5	<4	<4	8
Nitrate (µg N/L)	61	59	61	141
PN (µg N/L)	24	23	20	20
PC (µg C/L)	189	181	175	156
TP (µg P/L)	2.0	2.0	2.0	
PP (µg P/L)	0.5	0.6	0.7	0.5
Bacteria (X10^{6}/mL)	0.17	0.36	0.27	
Chlorophyll (µg/L)a	1.27	1.37	1.22	0.36
Chlorophyll (µg/L)b	0.68	0.63	0.63	0.21
Chlorophyll (µg/L)c	0.58	0.56	0.58	<0.12
Alg. Volume (mm^{3}/m^{3})	1297	1413	1454	446
Alg. Carbon (mg C/m^{3})	120	120	124	36

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 51. Physical, chemical and biological data from Quesnel Lake, Stn. 5, May 16, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	40
Temperature (^{o}C)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
TDS (mg/L)			57.1							
pH		6.8		6.9		6.8				
T. Alk. (mg/L $CaCO_3$)		47.36		49.30		48.10				
DIC (mg/L)		17.91		16.60		17.82				
TDN (µg N/L)	312	360	376	339	443	371	402	371	416	412
Ammonia (µg N/L)	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Nitrate (µg N/L)	123	124	120	121	123	123	123	123	123	124
PN (µg N/L)	16	14	16	16	14	13	15	14	10	13
PC (µg C/L)	134	123	163	152	132	118	127	120	110	132
TP (µg P/L)	2.0	2.0	3.0	3.0	2.0	4.0	4.0	3.0	2.0	2.0
PP (µg P/L)	0.7	1.0	1.0	0.8	0.8	0.9	0.8	1.3	1.1	0.9
Bacteria ($X10^{6}$/mL)	0.23		0.09		0.21					
Chlorophyll ($\mu g/L$)	0.38	0.36	0.39	0.33	0.38	0.36	0.36	0.38	0.34	0.39
Alg. Volume (mm^3/m^3)	758	676	838	660	649	519	703	654	836	471
Alg. Carbon (mg C/m^3)	57	56	66	52	52	48	58	53	72	40
Pr. Prod. (mg $C/m^3/h$)a	0.12	0.46	0.31	0.39	0.40	0.34	0.24	0.17	0.17	
Pr. Prod. (mg $C/m^3/h$)b	0.04	0.13	0.18	0.49	0.48	0.26	0.20	0.23	0.07	

a Total Primary Production (>0.2 µm)
b Fractionated Primary Production (>3.0 µm)

Table 52. Physical, chemical and biological data from Quesnel Lake, Stn. 5, June 26, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	40
Temperature (^{o}C)	12.8	12.3		9.7		9.1		7.6		4.0
TDS (mg/L)				55.3						
pH		7.3		7.5		7.5				
T. Alk. (mg/L $CaCO_3$)		41.38		41.82		44.76				
DIC (mg/L)		11.16		10.94		11.67				
TDN (µg N/L)		215		208		206		230		202
Ammonia (µg N/L)		6		4		<4		8		<4
Nitrate (µg N/L)		63		75		92		104		117
PN (µg N/L)		60		39		20		15		13
PC (µg C/L)		392		299		159		116		92
TP (µg P/L)		5.0		6.0		4.0		2.0		1.0
PP (µg P/L)		4.6		3.9		1.8		1.5		1.2
Bacteria ($X10^{6}$/mL)		0.62		0.40		0.46				
Chlorophyll (µg/L)a		2.12		1.61		0.98		0.52		0.36
Chlorophyll (µg/L)b		1.32		1.11		0.54		0.36		0.18
Chlorophyll (µg/L)c		0.98		0.96		0.36		0.26		0.26
Alg. Volume (mm^3/m^3)		1635		1313		1404		1166		543
Alg. Carbon (mg C/m^3)		182		142		112		90		40
Pr. Prod. (mg $C/m^3/h$)d	1.80	2.83	1.33	0.88	0.38	0.14	0.17	0.00	0.04	
Pr. Prod. (mg $C/m^3/h$)e	0.61	1.00	0.41	0.24		0.21			0.60	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>2.0 µm)

Table 53. Physical, chemical and biological data from Quesnel Lake, Stn. 5, July 24, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	40
Temperature (^{o}C)	15.4	15.4		12.8		9.6	7.6			4.2
pH		7.3		7.3		7.3				
T. Alk. (mg/L $CaCO_3$)		44.02		43.97		45.86				
DIC (mg/L)		11.87		12.05		12.44				
TDN (µg N/L)		247		234		292		272		265
Ammonia (µg N/L)		7		6		6		7		9
Nitrate (µg N/L)		61		73		85		101		118
PN (µg N/L)		30		24		15		23		10
PC (µg C/L)		217		236		127		194		108
TP (µg P/L)		1.0		2.0		3.0		3.0		2.0
PP (µg P/L)		2.1		1.6		1.4		1.9		1.1
Bacteria ($X10^6$/mL)		0.29		0.25		0.20				
Chlorophyll (µg/L)a		0.95		0.80		1.00		0.66		0.22
Chlorophyll (µg/L)b		0.66		0.58		0.58		0.51		0.14
Chlorophyll (µg/L)c		0.48		0.46		0.53		0.26		<0.12
Alg. Volume (mm^3/m^3)		1191		912		1080		863		337
Alg. Carbon (mg C/m^3)		137		88		115		78		32
Pr. Prod. (mg $C/m^3/h$)d	0.62	1.25	0.86	0.96	0.45	0.13	0.19	0.09	0.00	
Pr. Prod. (mg $C/m^3/h$)e	0.34	0.44	0.62	0.35	0.15	0.10	0.05	0.23	0.10	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>3.0 µm)

Table 54. Physical, chemical and biological data from Quesnel Lake, Stn. 5, August 28, 1986.

Depth (m)	0	2.5	5	7.5	10	14	15	17.5	25	40
Temperature (^{o}C)	17.9	17.7		17.3		11.7		10.0		4.6
TDS (mg/L)				53.2						
pH		7.6		7.7		7.5				
T. Alk. (mg/L $CaCO_3$)		44.32		44.37		44.86				
DIC (mg/L)		11.24		11.13		11.61				
TDN (µg N/L)		148		158		230		192		227
Ammonia (µg N/L)		5				12		6		4
Nitrate (µg N/L)		38		41		83		109		133
PN (µg N/L)		35		18		21		15		16
PC (µg C/L)		288		155		152		130		184
TP (µg P/L)		<1.0		2.0		2.0		<1.0		1.0
PP (µg P/L)		0.8		0.5		0.8		0.9		0.5
Bacteria ($X10^6$/mL)		0.57		0.94		0.55				
Chlorophyll (µg/L)a		1.08		1.30		0.68		1.27		0.36
Chlorophyll (µg/L)b		0.68		0.71		1.22		0.75		0.23
Chlorophyll (µg/L)c		0.91		1.00		1.05		0.58		0.27
Alg. Volume (mm^3/m^3)		1368		1229		1021		753		364
Alg. Carbon (mg C/m^3)		115		108		102		78		30
Pr. Prod. (mg $C/m^3/h$)d	0.85	0.74	0.40		0.38	0.20	0.08	0.06	0.02	
Pr. Prod. (mg $C/m^3/h$)e	0.34	0.36	0.37		0.13	0.13	0.10	0.00	0.00	

a >0.8 µm b 0.8-2.0 µm c >2.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>2.0 µm)

Table 55. Physical, chemical and biological data from Quesnel Lake, Stn. 5, September 25, 1986.

Depth (m)	2.5	5	7.5	10	12.5	15	17.5	20	25	40
Temperature (^{o}C)	12.9	12.9	12.9	12.8	12.7	12.6	12.4	12.0	9.6	5.5
TDS (mg/L)			59.5							
pH	7.3				7.5					
T. Alk. (mg/L $CaCO_3$)	45.06				45.56					
DIC (mg/L)	12.12				11.75					
TDN (µg N/L)	258		227		243		227			238
Ammonia (µg N/L)	6		7		6		<4			<4
Nitrate (µg N/L)	46		48		54		58			114
PN (µg N/L)	23		21		20		17			15
PC (µg C/L)	208		175		180		146			106
TP (µg P/L)	2.0		3.0		1.0		2.0			2.0
PP (µg P/L)	1.0		0.9		1.0		1.0			1.3
Bacteria ($X10^{6}$/mL)	0.29		0.15		0.24					
Chlorophyll (µg/L)a	0.96		1.01		0.89		0.81			0.36
Chlorophyll (µg/L)b	0.75		0.53		0.39		0.61			0.22
Chlorophyll (µg/L)c	0.36		0.44		0.39		0.41			<0.12
Alg. Volume (mm^3/m^3)	1437		1486		1446		1590			345
Alg. Carbon (mg C/m^3)	113		122		121		130			28
Pr. Prod. (mg $C/m^3/h$)d	1.76	1.16	0.88	0.55	0.34	0.28	0.17	0.12	0.14	
Pr. Prod. (mg $C/m^3/h$)e	1.17	0.70	0.00	0.32	0.24	0.16	0.16	0.10	0.11	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>2.0 µm)

Table 56. Physical, chemical and biological data from Quesnel Lake, Stn. 5, October 17, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	40
Temperature (^{o}C)	10.4	10.5	10.5	10.5	10.4	10.2	9.9	9.5	8.8	5.2
pH		7.5				7.5				
T. Alk. (mg/L $CaCO_3$)		38.58				45.76				
DIC (mg/L)		10.02				11.88				
TDN (µg N/L)		160		204		198		233		246
Ammonia (µg N/L)		<4		<4		<4		7		<4
Nitrate (µg N/L)		58		60		64		80		155
PN (µg N/L)		24		21		21		17		12
PC (µg C/L)		200		180		182		160		121
TP (µg P/L)		2.0				5.0		4.0		2.0
PP (µg P/L)		0.8		1.0		0.6		0.5		0.6
Bacteria ($X10^6$/mL)		0.27		0.37		0.33				
Chlorophyll (µg/L)a		1.61		1.52		1.27		0.73		0.32
Chlorophyll (µg/L)b		0.78		0.81		0.59		0.34		0.19
Chlorophyll (µg/L)c		0.64		0.59		0.75		0.41		0.14
Alg. Volume (mm^3/m^3)		1774		1989		2116		1042		461
Alg. Carbon (mg C/m^3)		139		156		165		86		38
Pr. Prod. (mg C/m^3/h)d	0.67	0.86	0.82	0.78	0.46	0.32	0.14	0.20	0.17	
Pr. Prod. (mg C/m^3/h)e	0.42	0.56	0.57	0.48	0.31	0.16	0.08	0.12	0.06	

a >0.8 µm b 0.8-2.0 µm c >2.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>2.0 µm)

Table 57. Physical, chemical and biological data from Quesnel Lake, Stn. 7, May 14, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	40
Temperature (^{o}C)	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
TDS (mg/L)			62.9							
pH		6.8		6.8		6.8				
T. Alk. (mg/L $CaCO_3$)		48.55		48.60		48.10				
DIC (mg/L)		17.11		17.66		17.82				
TDN (µg N/L)	391	417	337	349	351	344	321	333	327	329
Ammonia (µg N/L)	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Nitrate (µg N/L)	119	119	120	120	121	121	121	121	120	122
PN (µg N/L)	11	9	10	10	11	9	9			18
PC (µg C/L)	106	105	115		124	128	117			261
TP (µg P/L)	3.0	3.0	3.0	3.0	3.0	3.0	5.0	3.0	3.0	3.0
PP (µg P/L)	1.6	1.5	1.6	1.5	1.6	1.6	1.6	1.8	1.5	1.6
Bacteria ($X10^6$/mL)	0.70		0.63		0.62					0.75
Chlorophyll ($\mu g/L$)	0.52	0.54	0.52	0.51	0.49	0.54	0.49	0.51	0.41	0.51
Alg. Volume (mm^3/m^3)	1081	716	583	671	788	940	758	570	952	671
Alg. Carbon (mg C/m^3)	92	65	57	62	66	82	73	52	78	56
Pr. Prod. (mg $C/m^3/h$)a	0.12	0.55	0.64	0.64	0.46	0.46	0.24	0.17	0.10	
Pr. Prod. (mg $C/m^3/h$)b	0.06	0.28	0.34	0.34	0.40	0.30	0.22	0.17	0.08	

a Total Primary Production (>0.2 µm)
b Fractionated Primary Production (>3.0 µm)

Table 58. Physical, chemical and biological data from Quesnel Lake, Stn. 7, June 24, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	40
Temperature (^{o}C)	12.8	12.3		11.7		10.2		8.4		4.7
TDS (mg/L)				56.4						
pH		6.6				7.5				
T. Alk. (mg/L $CaCO_3$)		39.08				42.87				
DIC (mg/L)		15.38				11.27				
TDN (µg N/L)		203		223		199		212		224
Ammonia (µg N/L)		8		<4		7		5		4
Nitrate (µg N/L)		72		36		90		94		109
PN (µg N/L)		29		34		21		14		16
PC (µg C/L)		244		261		202		119		136
TP (µg P/L)		4.0		10.0		3.0		5.0		2.0
PP (µg P/L)		3.9		4.5		1.9		2.2		1.4
Bacteria ($X10^{6}$/mL)		0.38		0.44		0.26				
Chlorophyll (µg/L)a		2.35		1.65		0.69		0.51		0.38
Chlorophyll (µg/L)b		1.16		1.01		0.41		0.28		0.21
Chlorophyll (µg/L)c		0.52		0.55		0.25		0.28		0.21
Alg. Volume (mm^3/m^3)		1339		1254		1102		4415		706
Alg. Carbon (mg C/m^3)		136		151		91		331		52
Pr. Prod. (mg $C/m^3/h$)d	1.43	3.62	3.07	1.24	0.78	0.00	1.19	1.71	0.15	
Pr. Prod. (mg $C/m^3/h$)e	0.70	1.41	1.48	0.79	1.91	0.84		0.29	0.31	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>2.0 µm)

Table 59. Physical, chemical and biological data from Quesnel Lake, Stn. 7, July 22, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	40
Temperature (^{o}C)	19.9		14.8		12.8					4.7
pH		7.6		7.4		7.5				
T. Alk. (mg/L $CaCO_3$)		42.12		40.62		43.87				
DIC (mg/L)		10.82		10.70		11.40				
TDN (µg N/L)		197		213		228		230		227
Ammonia (µg N/L)		<4		4		<4		<4		<4
Nitrate (µg N/L)		36		32		79		99		117
PN (µg N/L)		37		26		21		19		12
PC (µg C/L)		292		222		152		141		97
TP (µg P/L)		4.0		4.0		3.0		2.0		2.0
PP (µg P/L)		2.1		2.8		1.7		1.4		1.0
Bacteria ($X10^6$/mL)		0.36		0.44		0.38				
Chlorophyll (µg/L)a		1.57		1.22		0.81		0.59		0.17
Chlorophyll (µg/L)b		0.91		1.17		0.71		0.46		0.12
Chlorophyll (µg/L)c		0.59		0.53		0.28		0.28		0.12
Alg. Volume (mm^3/m^3)		1193		866		608		679		621
Alg. Carbon (mg C/m^3)		158		86		60		57		47
Pr. Prod. (mg C/m^3/h)d	0.76	1.39	1.23	0.83	0.10	0.01	0.00	0.07	0.00	
Pr. Prod. (mg C/m^3/h)e	0.74	1.34	0.57	0.45	0.11	0.00	0.02	0.00	0.00	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>3.0 µm)

Table 60. Physical, chemical and biological data from Quesnel Lake, Stn. 7, August 26, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	25	40
Temperature (^{o}C)	17.3	17.2		16.7		15.7		10.5		4.4
TDS (mg/L)				68.0						
pH		7.7		7.8		7.8				
T. Alk. (mg/L $CaCO_3$)		43.62		44.27		43.47				
DIC (mg/L)		10.93		11.06		10.86				
TDN (µg N/L)		426		378		318		413		554
Ammonia (µg N/L)		2		7		7		7		3
Nitrate (µg N/L)		42		45		48		87		125
PN (µg N/L)		24		24		24		21		16
PC (µg C/L)		195		196		182		161		99
TP (µg P/L)		<1.0		<1.0		1.0		<1.0		<1.0
PP (µg P/L)		0.9		1.5		1.1		0.9		0.6
Bacteria ($X10^{6}$/mL)		0.31		0.43		0.36		0.33		0.50
Chlorophyll (µg/L)a		0.55		0.68		1.04		0.77		0.24
Chlorophyll (µg/L)b		0.46		0.51		0.60		0.46		0.24
Chlorophyll (µg/L)c		0.15		0.17		0.20		0.14		0.08
Alg. Volume (mm^3/m^3)		1070		871		1176		1023		307
Alg. Carbon (mg C/m^3)		102		86		104		92		28
Pr. Prod. (mg $C/m^3/h$)d	0.70	1.07	0.88	0.76	0.72	0.37	0.25	0.17	0.05	
Pr. Prod. (mg $C/m^3/h$)e	0.35	0.49	0.40	0.20	0.14	0.14	0.05	0.00	0.00	

a >0.8 µm b 0.8-2.0 µm c >2.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>2.0 µm)

Table 61. Physical, chemical and biological data from Quesnel Lake, Stn. 7, September 23, 1986.

Depth (m)	2.5	5	7.5	10	12.5	15	17.5	20	25	40
Temperature (^{o}C)	13.2	13.2	13.2	13.2	13.2	13.1	13.1	12.6	10.2	6.0
TDS (mg/L)			59.9							
pH	7.6		7.4		7.5					
T. Alk. (mg/L $CaCO_3$)	43.97		44.22		43.42					
DIC (mg/L)	11.29		11.65		11.24					
TDN (µg N/L)	199		203		223		207			227
Ammonia (µg N/L)			<4		9		10			5
Nitrate (µg N/L)	48		51		50		57			125
PN (µg N/L)			25		24		21			18
PC (µg C/L)			216		186		169			147
TP (µg P/L)	3.0		1.0		<1.0		2.0			3.0
PP (µg P/L)	1.8		1.4		1.3		1.3			1.3
Bacteria ($X10^6$/mL)	0.43		0.51		0.39					
Chlorophyll (µg/L)a	1.00		1.61		1.28		0.95			0.44
Chlorophyll (µg/L)b	0.46		0.54		0.54		0.46			0.24
Chlorophyll (µg/L)c	0.54		0.48		0.64		0.51			0.24
Alg. Volume (mm^3/m^3)	1314		1649		1585		1222			497
Alg. Carbon (mg C/m^3)	112		141		129		103			43
Pr. Prod. (mg $C/m^3/h$)d	1.14	1.05	0.67	0.46	0.22	0.20	0.05	0.36	0.17	
Pr. Prod. (mg $C/m^3/h$)e	0.71	0.49	0.37	0.17	0.09	0.10	0.02	0.08	0.04	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm
d Total Primary Production (>0.2 µm)
e Fractionated Primary Production (>2.0 µm)

Table 62. Physical, chemical and biological data from Quesnel Lake, Stn. 7, October 18, 1986.

Depth (m)	0	2.5	5	7.5	10	12.5	15	17.5	20	40
Temperature (^{o}C)	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.1	9.7	4.5
pH		7.3		7.5						
T. Alk. (mg/L $CaCO_3$)		44.32		45.76						
DIC (mg/L)		12.01		12.02						
TDN (µg N/L)		229		219		238		265		267
Ammonia (µg N/L)		<4		10		6		8		6
Nitrate (µg N/L)		56		58		58		65		138
PN (µg N/L)		44		32		26		21		16
PC (µg C/L)		239		252		173		162		154
TP (µg P/L)		3.0		4.0		4.0		4.0		3.0
PP (µg P/L)		0.8		0.8		0.8		1.0		0.9
Bacteria ($X10^6$/mL)		0.80		0.97		0.76				
Chlorophyll (µg/L)a		1.57		1.44		1.52		0.76		0.34
Chlorophyll (µg/L)b		0.80		0.90		0.78		0.34		0.16
Chlorophyll (µg/L)c		0.61		0.90		0.80		0.48		0.19
Alg. Volume (mm^3/m^3)		2135		2250		1929		1328		352
Alg. Carbon (mg C/m^3)		168		179		150		101		32
Pr. Prod. (mg $C/m^3/h$)d	1.09	1.26	0.89	0.58	0.39	0.31	0.17	0.09	0.12	
Pr. Prod. (mg $C/m^3/h$)e	0.56	0.77	0.60	0.40	0.19	0.15	0.11	0.08	0.07	

a >0.8 µm b 0.8-2.0 µm c >2.0 µm
d Total Primary Production (>2.0 µm)
e Fractionated Primary Production (>2.0 µm)

Table 63. Physical, chemical and biological data from Quesnel Lake, Stn. 8, May 14, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	4.4	4.2	4.2	4.2
TDS (mg/L)		67.6		
TDN (µg N/L)	409	373	356	361
Ammonia (µg N/L)	<4	<4	<4	<4
Nitrate (µg N/L)	107	108	108	109
PN (µg N/L)	19	17	18	17
PC (µg C/L)	210	186	177	207
TP (µg P/L)	3.0	4.0	3.0	3.0
PP (µg P/L)	1.5	1.7	1.8	1.7
Bacteria (X10^{6}/mL)	0.66	0.78		
Chlorophyll (µg/L)	0.64	0.67	0.70	0.69
Alg. Volume (mm^{3}/m^{3})	1082	1380	852	
Alg. Carbon (mg C/m^{3})	86	108	68	

Table 64. Physical, chemical and biological data from Quesnel Lake, Stn. 8, June 24, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	13.0	11.9	10.7	4.7
TDS (mg/L)			29.8	
TDN (µg N/L)	185	199	209	242
Ammonia (µg N/L)	4	<4	4	
Nitrate (µg N/L)	73	73		104
PN (µg N/L)	24	40	33	15
PC (µg N/L)	236	296	318	191
TP (µg P/L)	4.0	4.0	5.0	2.0
PP (µg P/L)	1.7	2.7	2.9	1.5
Bacteria (X10^{6}/mL)	0.25	0.36	0.34	
Chlorophyll (µg/L)a	1.47	2.24	1.75	0.44
Chlorophyll (µg/L)b	0.77	0.80	0.90	0.20
Chlorophyll (µg/L)c	0.44	0.51	0.52	0.31
Alg. Volume (mm^{3}/m^{3})	1721	1543	1376	598
Alg. Carbon (mg C/m^{3})	134	151	131	49

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 65. Chemical and biological data from Quesnel Lake, Stn. 8, July 22, 1986.

Depth (m)	1	5	10	40
TDS (mg/L)		58.7		
TDN (µg N/L)	264	222	293	331
Ammonia (µg N/L)	8	5	9	9
Nitrate (µg N/L)	46	50	62	116
PN (µg N/L)	35	30	28	22
PC (µg C/L)	381	238	191	144
TP (µg P/L)	3.0	2.0	3.0	2.0
PP (µg P/L)	1.9	2.0	1.8	1.0
Bacteria ($X10^6$/mL)	0.30	0.28	0.40	
Chlorophyll (µg/L)a	1.53	1.23	1.05	0.24
Chlorophyll (µg/L)b	0.81	0.76	0.91	0.12
Chlorophyll (µg/L)c	0.71	0.38	0.46	<0.12
Alg. Volume (mm^3/m^3)	2072	1613	1160	
Alg. Carbon (mg C/m^3)	282	187	116	

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 66. Physical, chemical and biological data from Quesnel Lake, Stn. 8, August 26, 1986.

Depth (m)	1	5	10	40
Temperature (^oC)	17.1	16.3	15.4	5.0
TDS (mg/L)		58.7		
TDN (µg N/L)	397	385	275	550
Ammonia (µg N/L)	12	13	13	<4
Nitrate (µg N/L)	49	50	54	128
PN (µg N/L)	21	25	24	18
PC (µg C/L)	148	187	188	120
TP (µg P/L)	<1.0	<1.0	<1.0	<1.0
PP (µg P/L)	0.7	0.8	1.2	0.8
Bacteria ($X10^6$/mL)	0.30	0.35	0.46	0.26
Chlorophyll (µg/L)a	0.51	0.77	0.99	0.29
Chlorophyll (µg/L)b	0.24	0.46	0.68	0.24
Chlorophyll (µg/L)c	0.33	0.38	0.51	0.24
Alg. Volume (mm^3/m^3)	955	1265	1345	705
Alg. Carbon (mg C/m^3)	87	114	123	56

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

Table 67. Physical, chemical and biological data from Quesnel Lake, Stn. 8, September 24, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	12.5	12.4	12.4	5.0
TDS (mg/L)		57.9		
TDN (µg N/L)	174	120	257	238
Ammonia (µg N/L)	7	<4	8	10
Nitrate (µg N/L)	56	57	58	142
PN (µg N/L)	5	21	17	13
PC (µg C/L)	114	290	242	243
TP (µg P/L)	2.0	3.0	2.0	3.0
PP (µg P/L)	0.9	1.3	1.0	0.9
Bacteria (X10^{6}/mL)	0.46	0.53	0.54	
Chlorophyll (µg/L)a	0.76	1.06	0.98	0.32
Chlorophyll (µg/L)b	0.61	0.63	0.68	0.17
Chlorophyll (µg/L)c	0.43	0.51	0.44	0.16
Alg. Volume (mm^{3}/m^{3})	2171	1444	1284	509
Alg. Carbon (mg C/m^{3})	173	112	103	41

a >0.8 µm b 0.8-3.0 µm c >3.0 µm

Table 68. Physical, chemical and biological data from Quesnel Lake, Stn. 8, October 18, 1986.

Depth (m)	1	5	10	40
Temperature (^{o}C)	10.5	10.5	10.5	5.1
TDS (mg/L)		65.6		
TDN (µg N/L)	216	211	265	274
Ammonia (µg N/L)	<4	5	8	5
Nitrate (µg N/L)	63	62	63	154
PN (µg N/L)	13	17	15	10
PC (µg C/L)	213	198	178	142
TP (µg P/L)	5.0		1.0	5.0
PP (µg P/L)	1.3	0.7	1.0	0.6
Bacteria (X10^{6}/mL)	1.28	0.61	0.67	
Chlorophyll (µg/L)a	1.52	1.48	1.48	0.27
Chlorophyll (µg/L)b	0.76	0.88	0.78	0.14
Chlorophyll (µg/L)c	0.63	0.75	0.68	0.14
Alg. Volume (mm^{3}/m^{3})	1495	1687	2334	644
Alg. Carbon (mg C/m^{3})	135	133	173	49

a >0.8 µm b 0.8-2.0 µm c >2.0 µm

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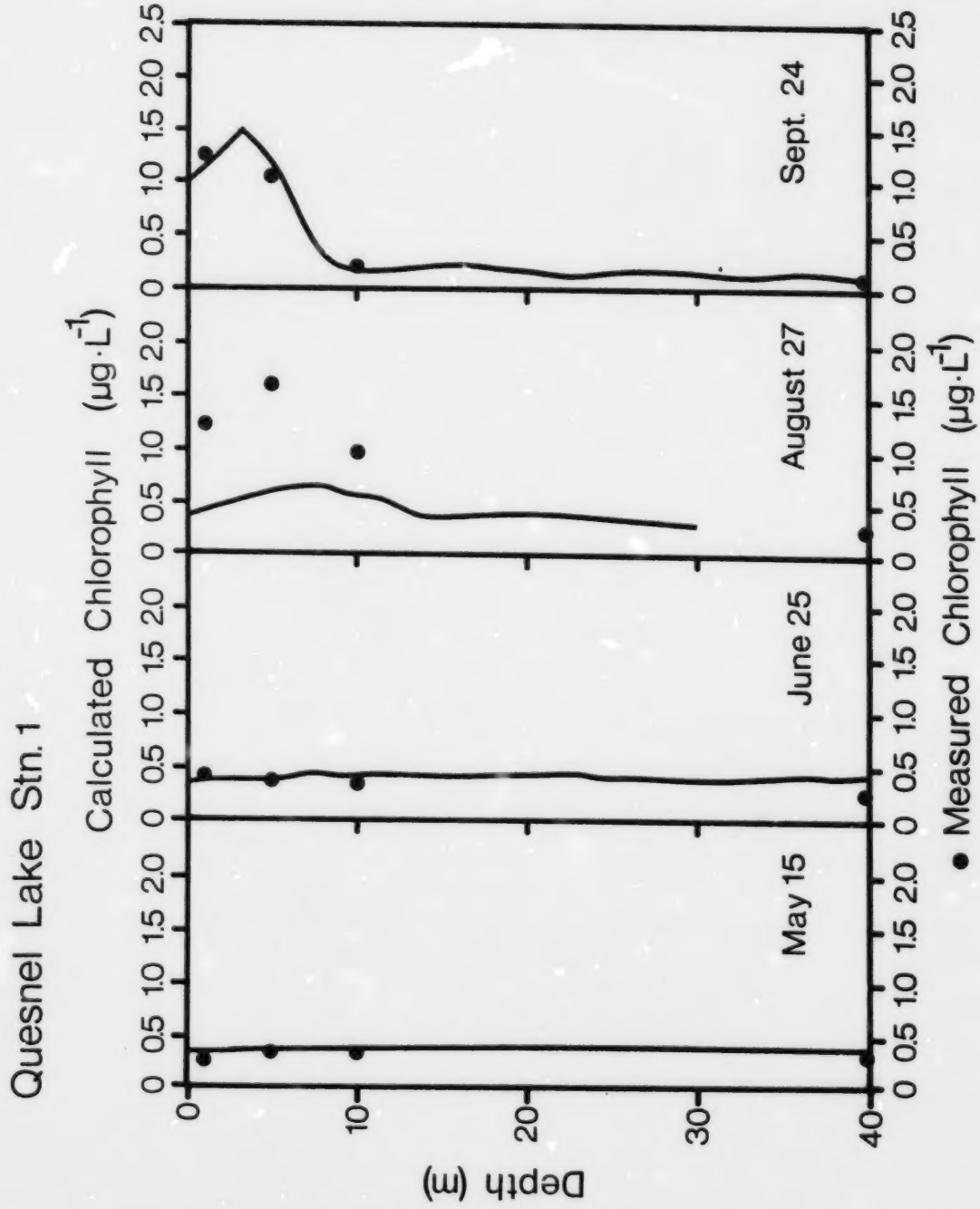

Fig. 3.1. Seasonal variation of in vivo fluorescence at Quesnel Lake, Stn. 1 during 1986. In vivo fluorescence data were normalized to chlorophyll.

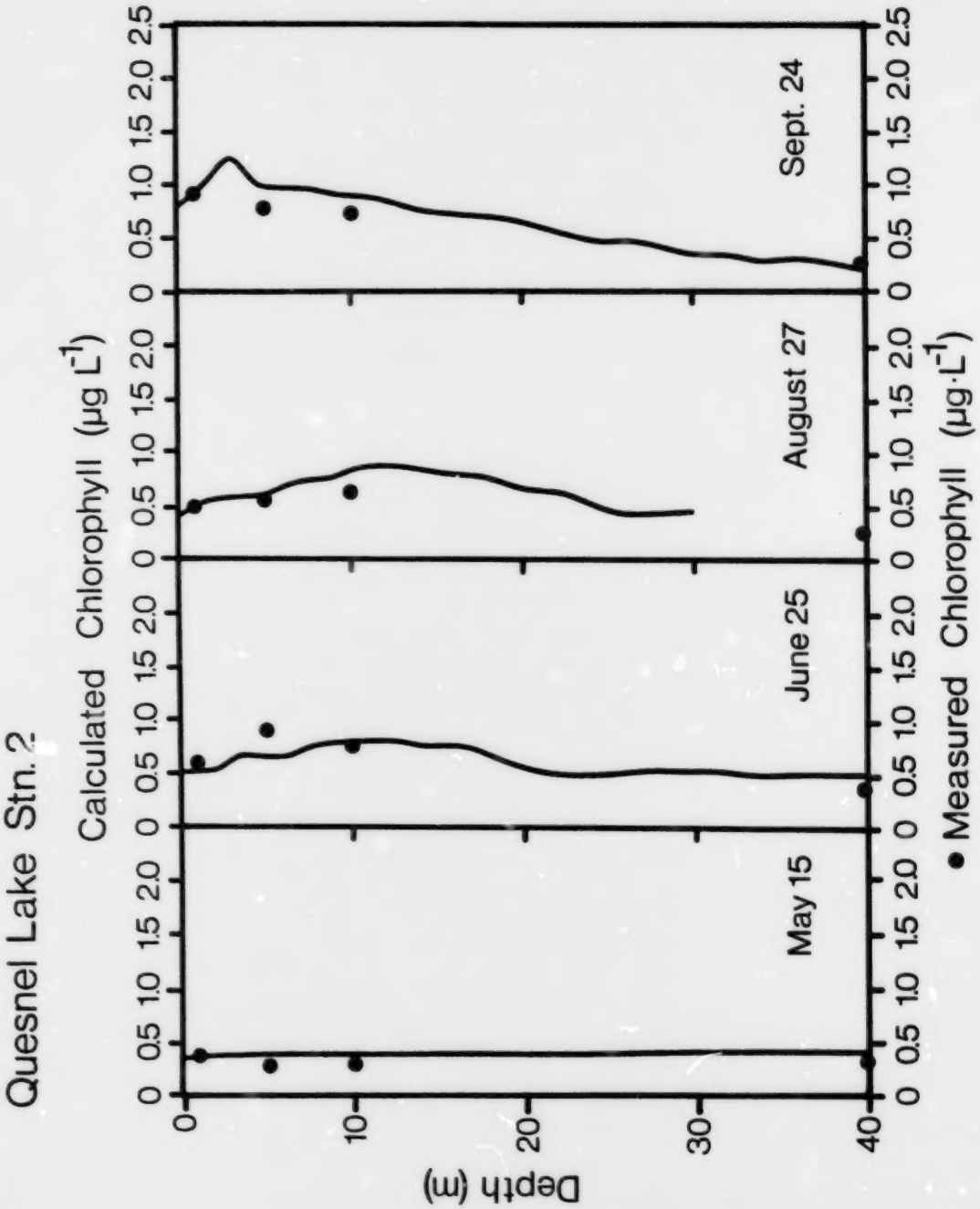

Fig. 3.2. Seasonal variation of in vivo fluorescence at Quesnel Lake, Stn. 2 during 1986. In vivo fluorescence data were normalized to chlorophyll.

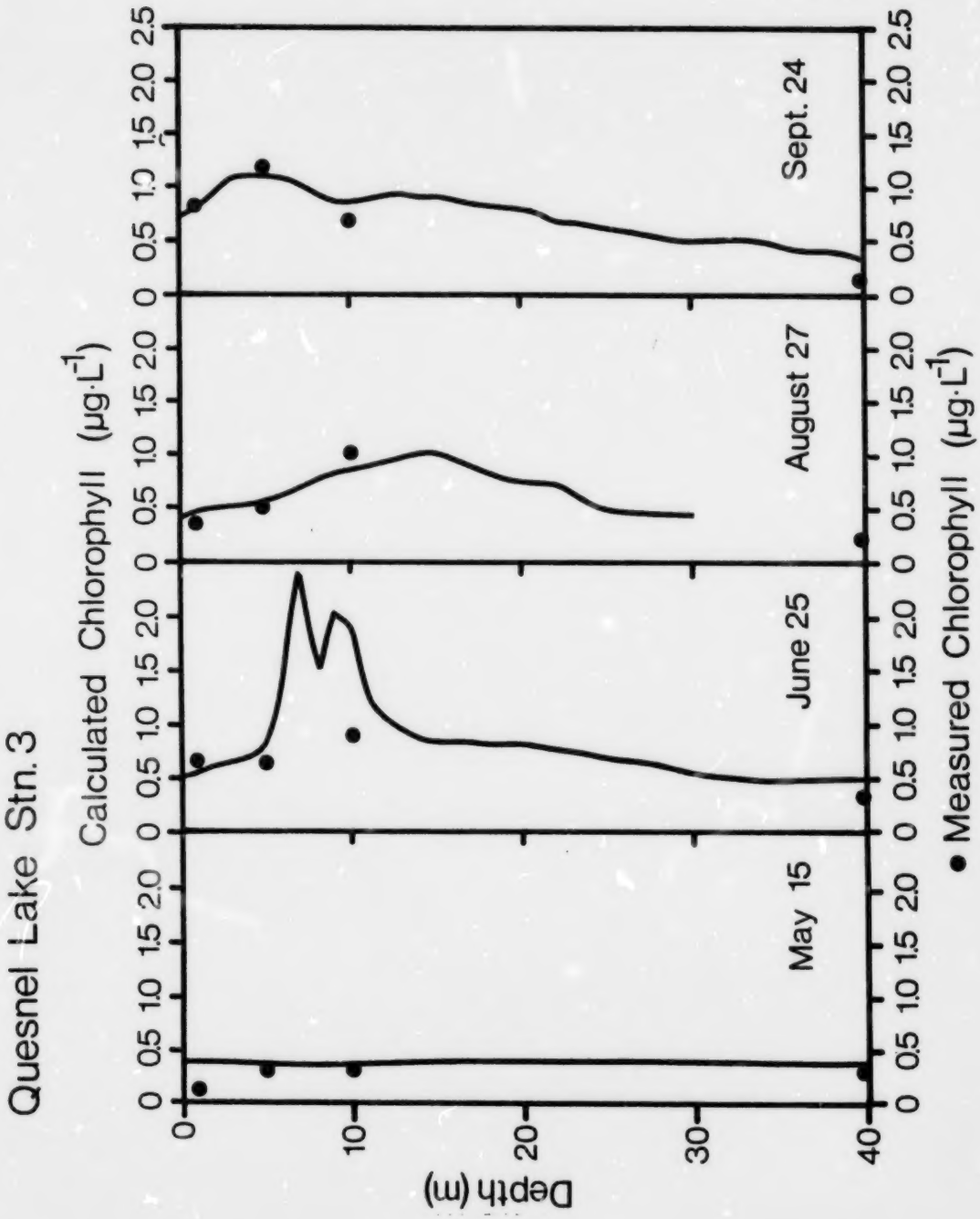

Fig. 3.3. Seasonal variation of in vivo fluorescence at Quesnel Lake, Stn. 3 during 1986. In vivo fluorescence data were normalized to chlorophyll.

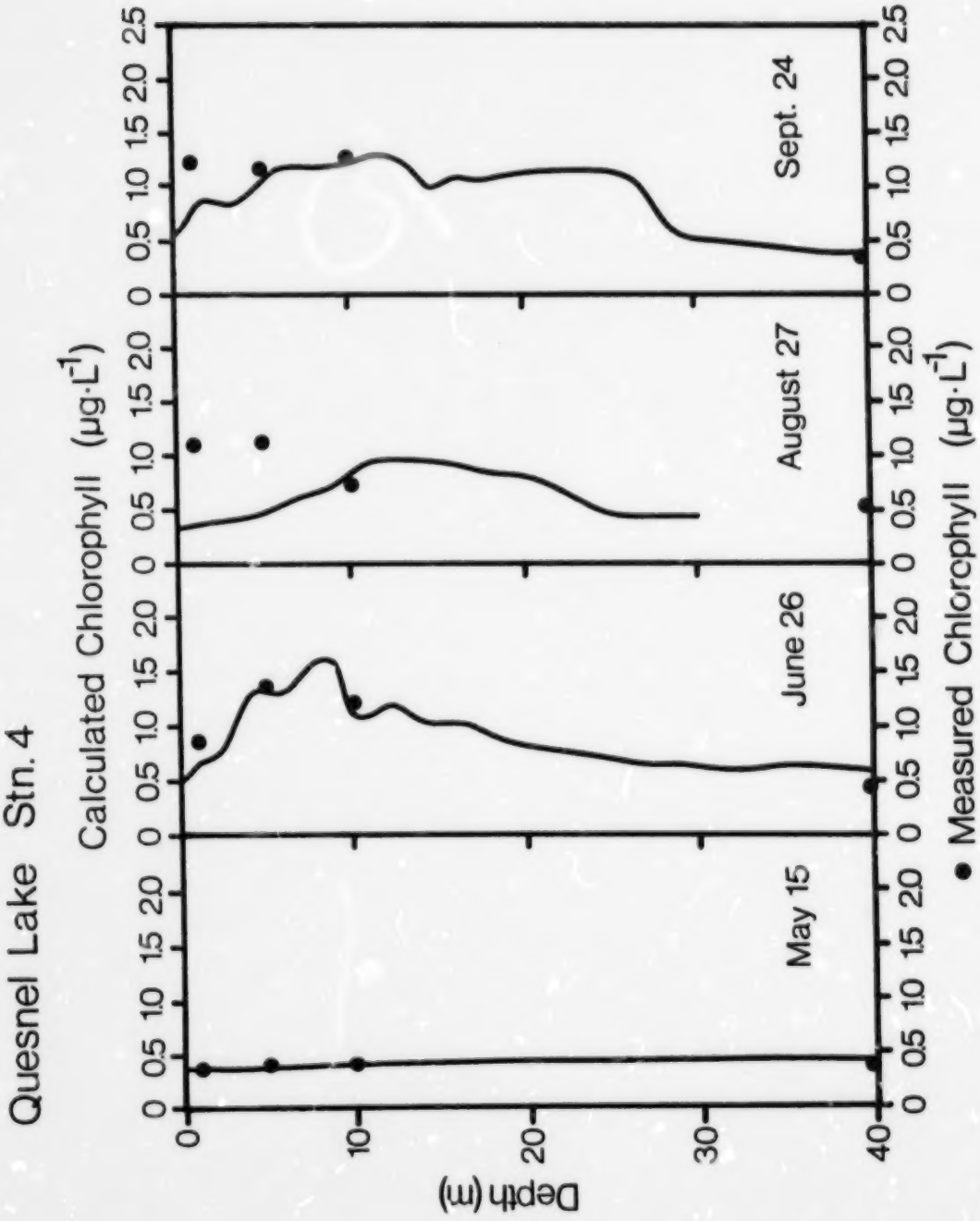

Fig. 3.4. Seasonal variation of in vivo fluorescence at Quesnel Lake, Stn. 4 during 1986. In vivo fluorescence data were normalized to chlorophyll.

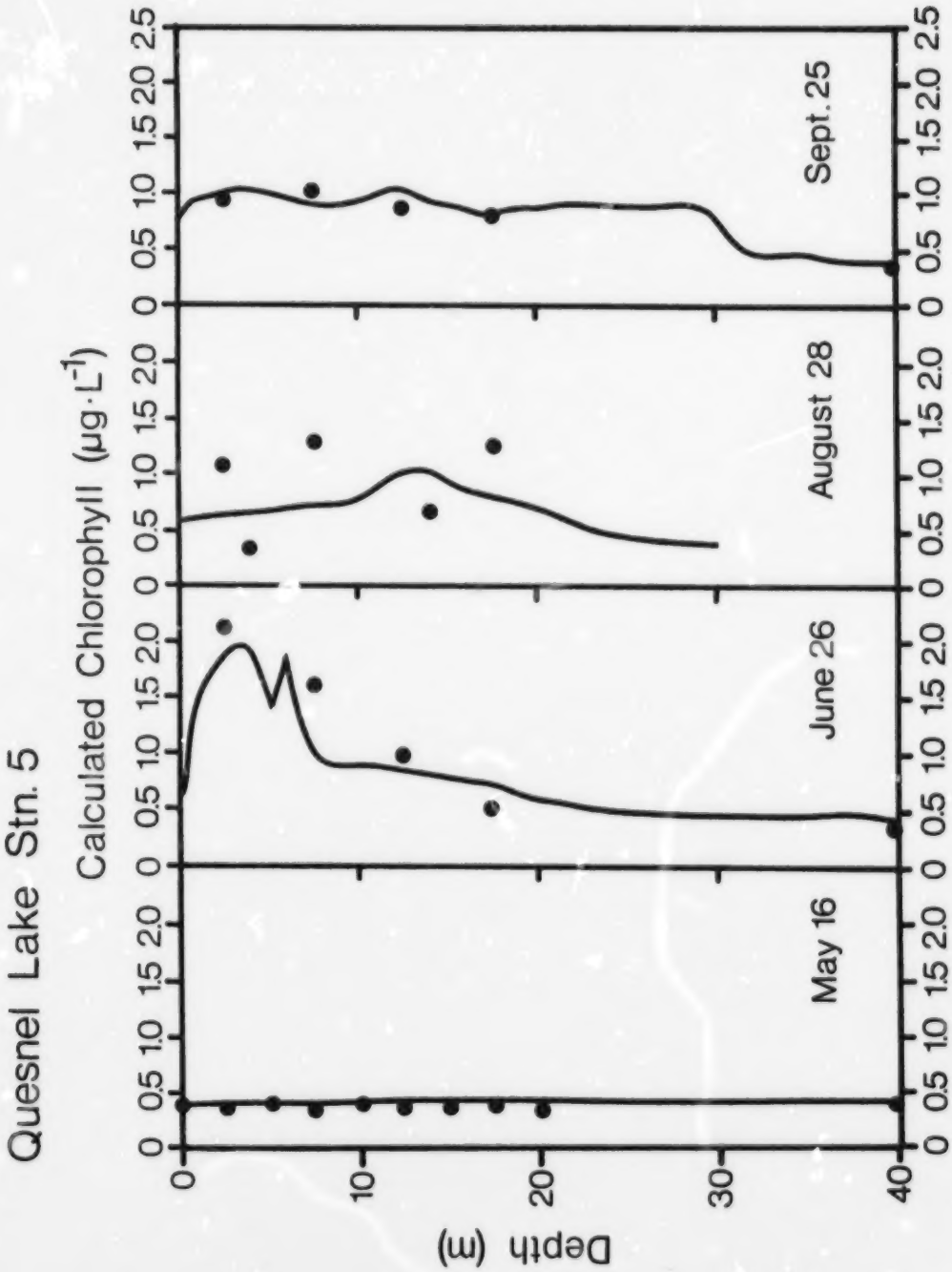

Fig. 3.5. Seasonal variation of *in vivo* fluorescence at Quesnel Lake, Stn. 5 during 1986. *In vivo* fluorescence data were normalized to chlorophyll.

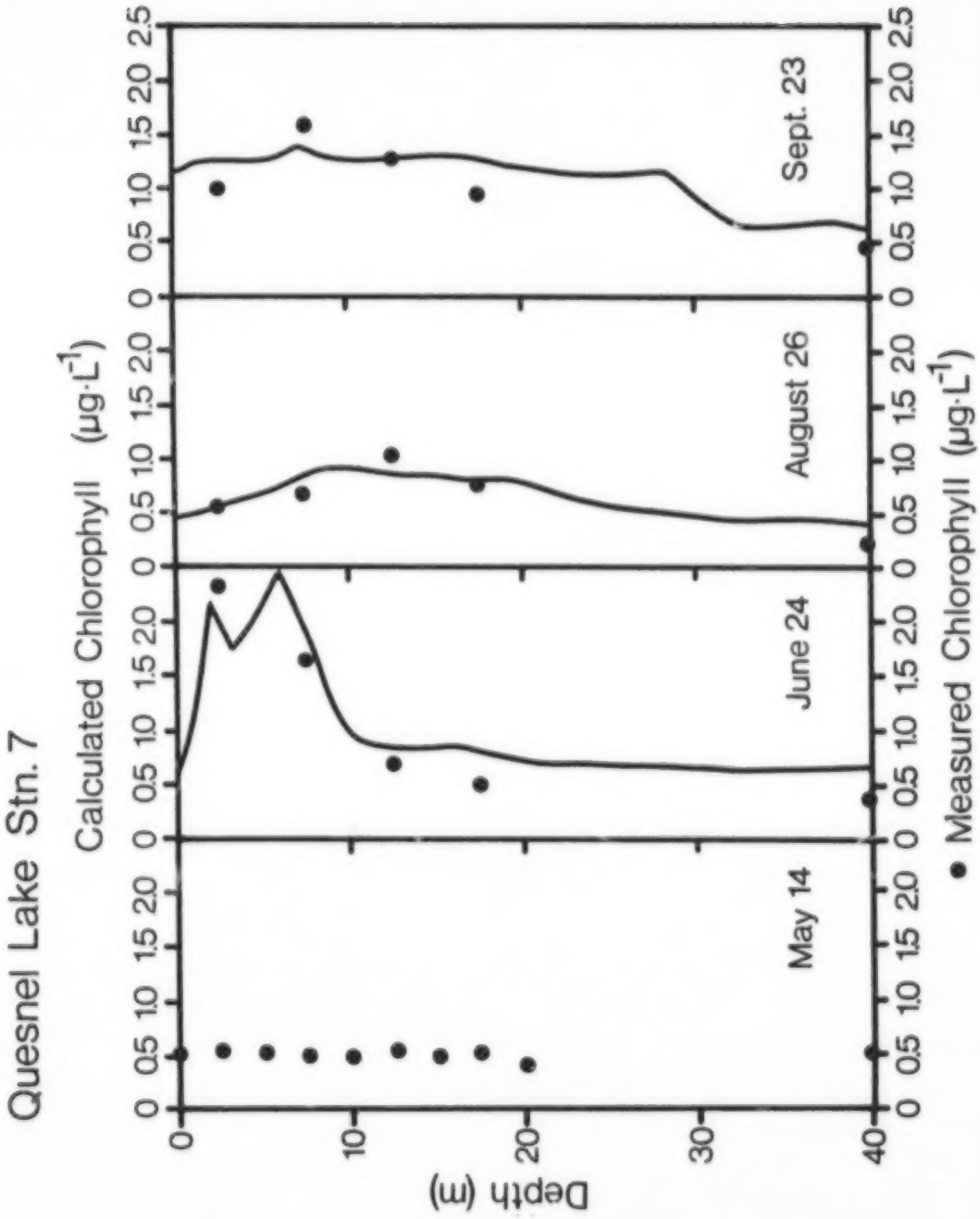

Fig. 3.6. Seasonal variation of in vivo fluorescence at Quesnel Lake, Stn. 7 during 1986. In vivo fluorescence data were normalized to chlorophyll.

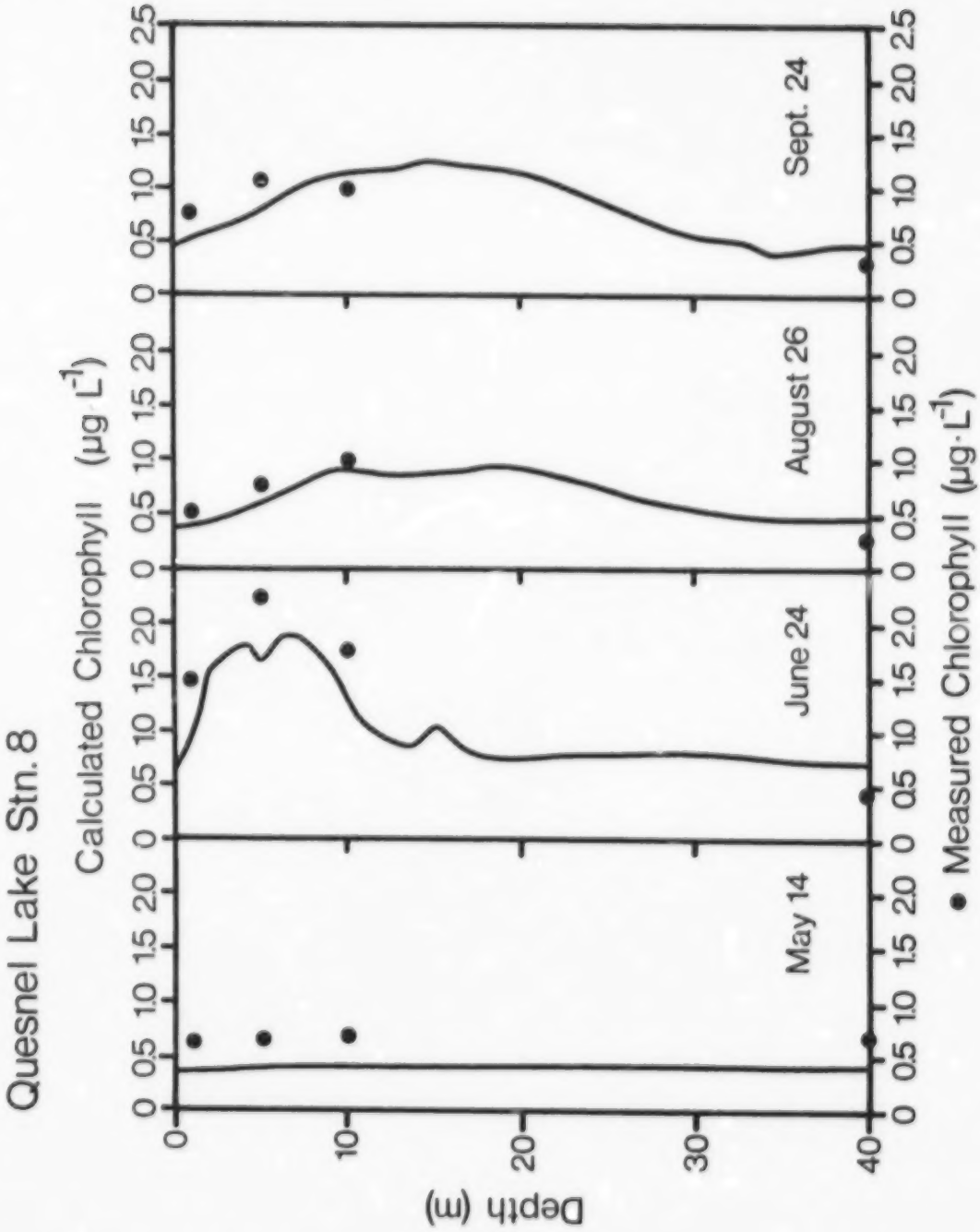

Fig. 3.7. Seasonal variation of *in vivo* fluorescence at Quesnel Lake, Stn. 8 during 1986. *In vivo* fluorescence data were normalized to chlorophyll.

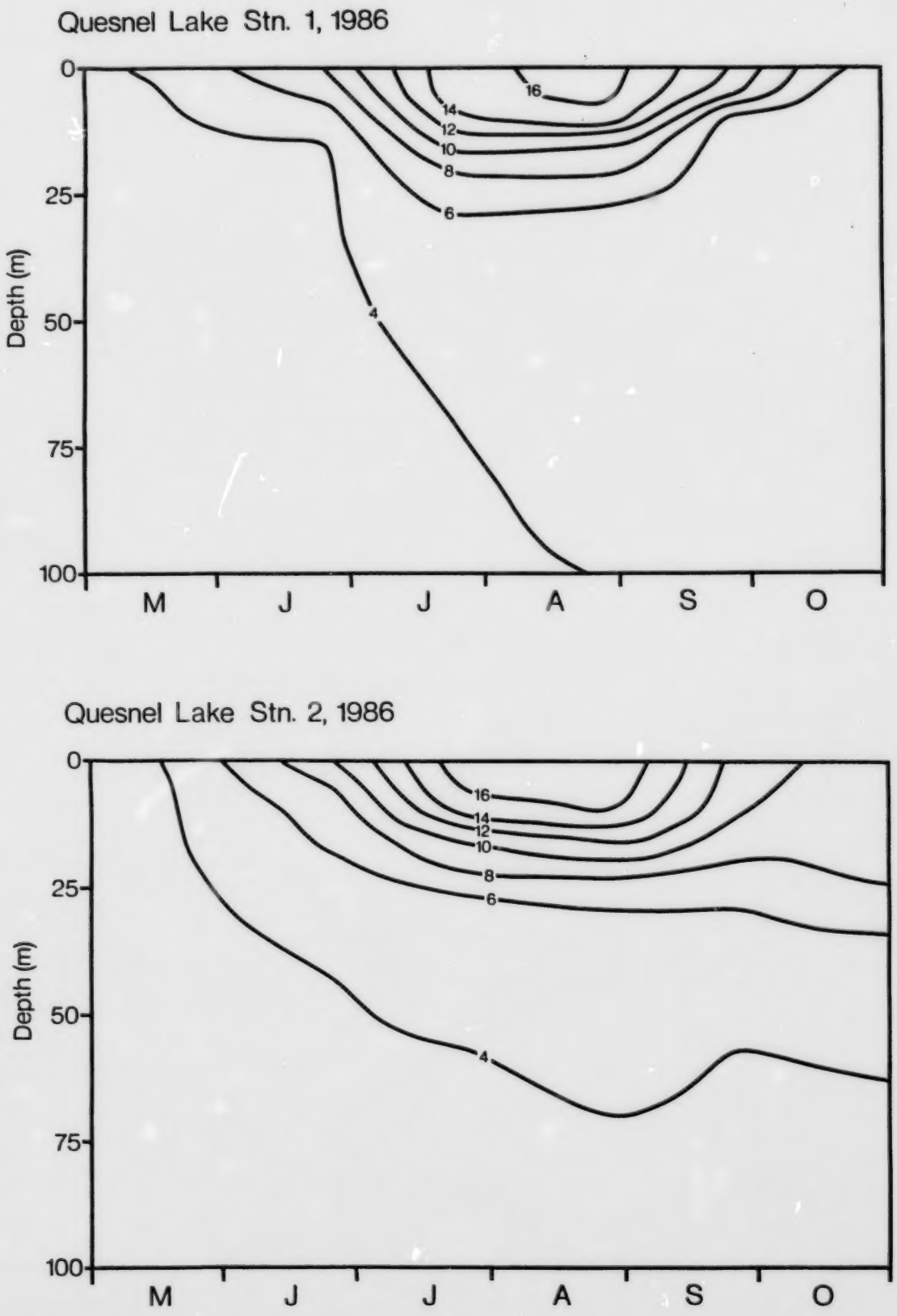

Fig. 3.8. Quesnel Lake stations 1 and 2 isotherms.

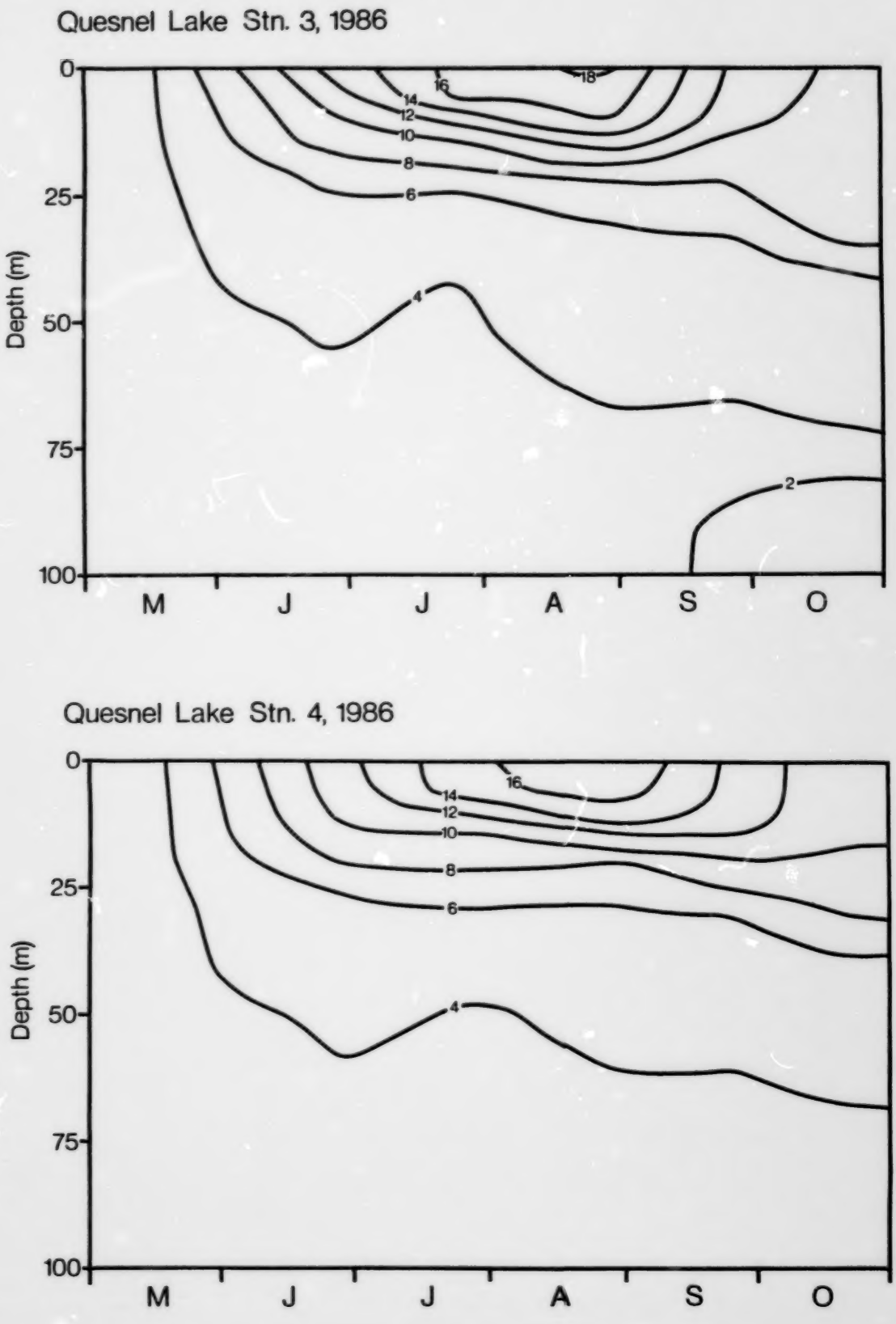

Fig. 3.9. Quesnel Lake stations 3 and 4 isotherms.

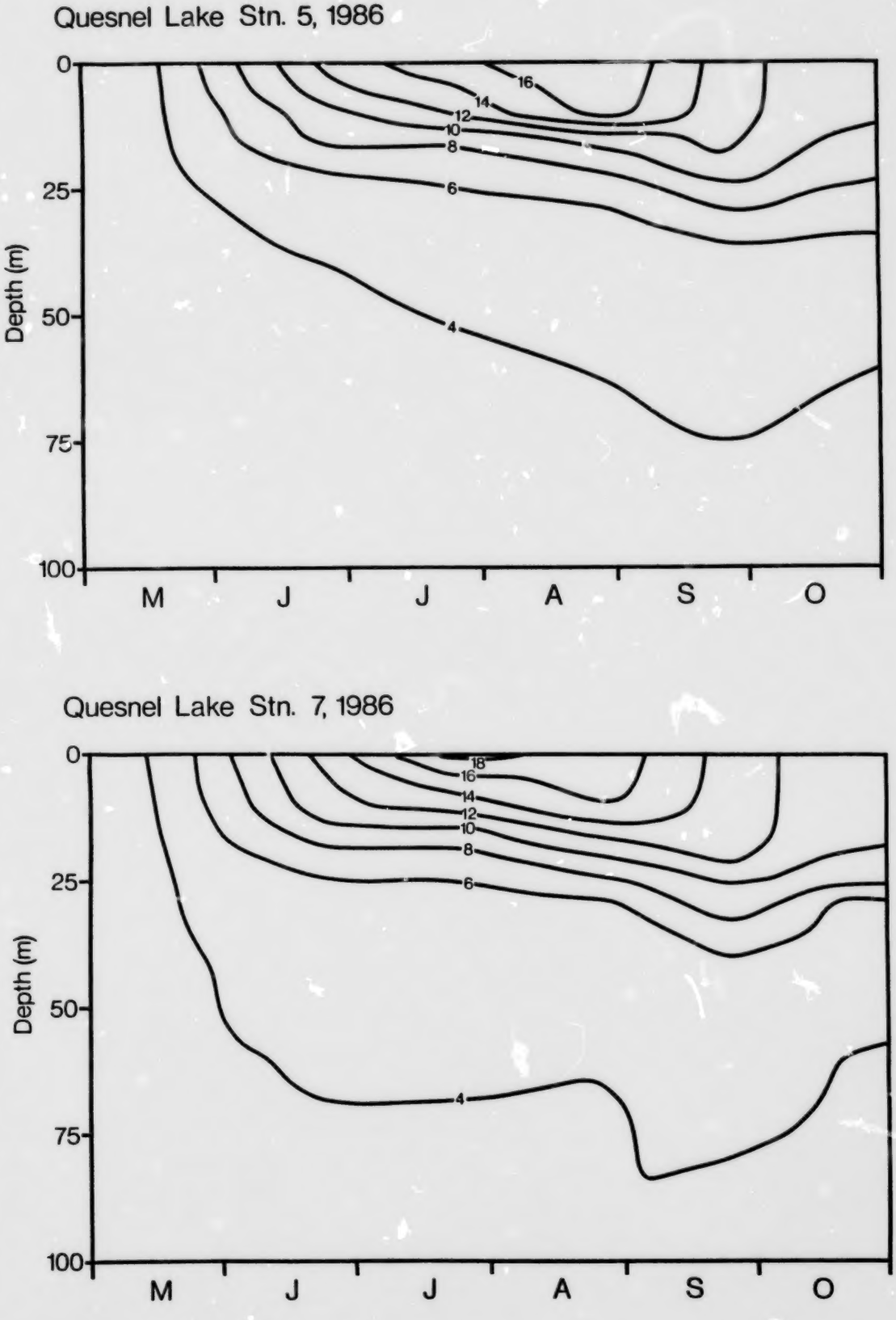

Fig. 3.10. Quesnel Lake stations 5 and 7 isotherms.

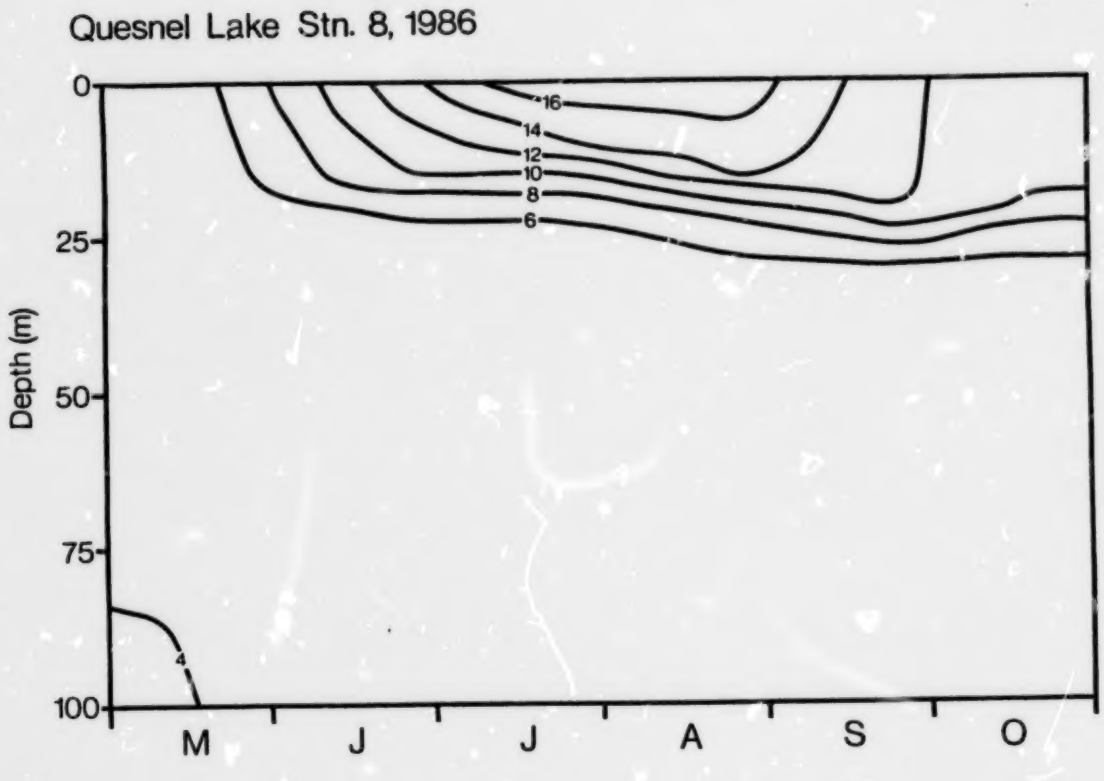

Fig. 3.11. Quesnel Lake station 8 isotherms.

Appendix Table 1. Alphabetical list of publications (1977-1990) resulting from limnological investigations by Lake Enrichment Program staff.

Costella, A.C., B. Nidle, and K.S. Shortreed. 1982. Limnological results from the 1980 Lake Enrichment Program. Can. MS Rep. Fish. Aquat. Sci. 1635: 291 p.

————. 1983. Limnological results from the 1981 British Columbia Lake Enrichment Program. Can MS Rep. Fish. Aquat. Sci. 1693: 277 p.

————. 1983. Limnological results from the 1982 British Columbia Lake Enrichment Program. Can. MS Rep. Fish. Aquat. Sci. 1706: 227 p.

Hardy, F.J., K.S. Shortreed, and J.G. Stockner. 1986. Bacterioplankton, phytoplankton, and zooplankton communities in a British Columbia coastal lake before and after nutrient reduction. Can. J. Fish. Aquat. Sci. 43: 1504-1514.

Hyatt, K.D., and J.G. Stockner. 1985. Responses of sockeye salmon (*Oncorhynchus nerka*) to fertilization of British Columbia coastal lakes. Can. J. Fish. Aquat. Sci. 42: 320-331.

MacIsaac, E.A., K.S. Shortreed, and J.G. Stockner. 1981. Seasonal distribution of bacterioplankton numbers and activities in eight fertilized or untreated oligotrophic British Columbia lakes. Can. Tech. Rep. Fish. Aquat. Sci. 994: 43 p.

Nidle, B.H., K.S. Shortreed, and K. Masuda. 1984. Limnological results from the 1983 British Columbia Lake Enrichment Program. Can. MS Rep. Fish. Aquat. Sci. 1752: 212 p.

Nidle, B.H., and K.S. Shortreed. 1985. Limnological results from the 1984 British Columbia Lake Enrichment Program. Can. MS Rep. Fish. Aquat. Sci. 1834: 202 p.

Nidle, B.H., and K.S. Shortreed. 1987. Limnological results from the 1985 British Columbia Lake Enrichment Program. Can. Data Rep. Fish. Aquat. Sci. 631: 166 p.

Perrin, C., K.S. Shortreed, and J.G. Stockner. 1983. An integration of forest and lake fertilization: the transport and transportation of fertilizer elements. Can. J. Fish. Aquat. Sci. 41: 253-262.

Porter, K.G., H. Paerl, R. Hodson, M. Pace, J. Priscu, B. Riemann, D. Scavia and J.G. Stockner. 1988. Microbial interactions in lake food webs, p. 209-228. In: S.R. Carpenter (ed.) Complex interactions in lake communities. Springer-Verlag, New York.

Seki, H., E.A. MacIsaac, and J.G. Stockner. 1980. The turnover rate of dissolved organic material in waters used by anadromous Pacific salmon on their return to Great Central Lake on Vancouver Island, British Columbia, Canada. Arch. Hydrobiol. 88: 58-72.

Seki, H., K.S. Shortreed, and J.G. Stockner. 1980. Turnover rate of dissolved organic materials in glacially oligotrophic lakes in British Columbia, Canada. Arch. Hydrobiol. 90: 210-216.

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